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SUMMARY OF TRADE AND TARIFF INFORMATION

Prepared in Terms of the Tariff Schedules of the United States

ORES AND CONCENTRATES AND OTHER METAL-BEARING MATERIALS

TSUS Items 521.17,
and 601.03-603.70

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PREFACE

The United States International Trade Commission maintains a Summary of Trade and Tariff Information series of informational reports on the thousands of products imported into and exported from the United States. The summaries contain information on product uses, U.S. producers, and customs treatment, and they include analyses of the basic factors affecting trends in consumption, production, and trade as well as those bearing on the competitiveness of U.S. industries in domestic and foreign markets.

This supplement is designed to maintain the usefulness of the original summary prepared for this commodity area by providing current consumption and trade statistics and information on significant developments since the initial summary's release. The current statistical tables and tariff schedule extracts contained in the looseleaf supplement can easily be substituted for the corresponding pages in the original summary.

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SUPPLEMENT TO THE SUMMARY OF TRADE AND TARIFF INFORMATION ON ORES AND CONCENTRATES AND OTHER METAL-BEARING MATERIALS
(PUBLISHED IN FEBRUARY 1982)

OVERVIEW

U.S. industry

Basic data and information.--Of the 24 basic metal-bearing materials covered by this summary supplement and produced by the metals mining industry sector, iron ore and copper have the highest domestic values, accounting for 65 percent of total U.S. metallic mineral production. Table 1 presents selected data on the industry for 1980-84.

Table 1.--Highlights of the U.S. metals mining industry, 1980-84

Item	1980	1981	1982	1983	1984
Industry (SIC) 10:					
Value of shipments----million dollars--	8,921	8,842	5,544	5,866	5,925
Value added 1/-------------------do----	5,799	5,747	3,604	3,836	3,874
Total employment------------thousands--	98.2	103.7	73.8	56.9	58.7
Production workers---------------do----	73.9	78.0	53.6	41.3	42.9
Average hourly earnings of production workers------------------------------	$10.26	$11.55	$12.33	$12.57	$12.65

1/ Estimated on the basis of the U.S. Bureau of the Census, Census of Mineral Industries, 1977 and the U.S. Department of Commerce, Bureau of Industrial Economics, U.S. Industrial Outlook, 1985.

Source: U.S. Bureau of Mines, Branch of Economic Analysis, and U.S. Department of Labor, Bureau of Labor Statistics, except as noted.

During 1980-84, the value of metallic mineral shipments decreased 34 percent, reflecting the mining industry's lagging recovery following the decreased demand and slow recovery in two major markets--motor vehicles and construction. The value of shipments for the U.S. metals mining industry rose 6 percent in 1983 and 1 percent in 1984, indicating the beginning of an upturn as the benefits of recovery in consuming industries reach the mining sector. The decline in employment during 1980-84 of approximately 40 percent also

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reflects the increased use of labor saving equipment and the closure of some metal-mining operations.

Increased imports also had some effect on the level of ore shipments, primarily an indirect effect. Ores and concentrates and metal-bearing materials are only used in the manufacture of various metal or chemical products. Consequently, the market demand for ores and concentrates and metal-bearing materials is derived from the demand for the unwrought metals and chemicals or value-added metal products. When imports of unwrought metal or further-refined products displace domestic production of the particular metal or products, the effect is reduced demand for the ores used to produce the metal.

Numerous Federal programs and regulations directly affect domestic production of mineral raw materials, ranging from research and development, exploration, public land access, and mining and processing technology, to tax policies, energy and water supplies, and stockpiling of strategic and critical raw materials.

Major policy issues in 1981 focused on access to public lands, regulatory compliance costs, and the availability of strategic minerals. During 1981, Federal policies gave producers greater access to mineral resources on public lands, provided producers complied with proper environmental standards. On March 13, 1981, President Reagan directed the Federal Emergency Management Agency to begin the first major purchase program for the Strategic and Critical Materials Stockpile in more than 20 years. The Economy Recovery Tax Act of 1981, the provisions of which are retroactive to January 1, 1981, contained two significant provisions relating to the depreciation deduction and the investment tax credit, which were intended to strengthen the national economy and with it the mining sector.

On April 5, 1982, President Reagan submitted the National Materials and Minerals Program Plan and Report to Congress. The report discusses the importance of minerals to the economy and to the national security. Subjects reviewed included: land availability, materials research and development, minerals and materials data collection, and the strategic and critical materials stockpile.

Three provisions of the Tax Equity and Fiscal Responsibility Act of 1982 were of importance to the mining industry. Under one provision, immediate restrictions were placed on safe-harbor leasing transactions, with all such transactions eliminated after 1983. Under another provision, a mineral-specific tax change, effective in 1984, reduces by 15 percent the percentage depletion deduction for iron ore to the extent that the deduction was greater than the adjusted basis of the property. Other provisions of the act affected the investment tax credit and the accelerated capital recovery system.

On April 30, 1982, the United States rejected the United Nations Law of the Sea Treaty because of administration objections to certain treaty sections pertaining to seabed mining. At the same time, the President indicated that sections of the treaty dealing with navigation, overflight, and most other parts of the treaty serve both U.S. and world interests.

On March 10, 1983, the President issued Proclamation No. 5030, which established an Exclusive Economic Zone (EEZ) to a distance of 200 nautical miles from the U.S. coast. The part of the proclamation that is of major significance to mining states that: "Within the EEZ, the United States has, to the extent permitted by international law, sovereign rights for the purpose of exploring, conserving, and managing natural resources, both living and nonliving, of the seabed and subsoil and the superjacent waters . . ." Prior to the issuance of the proclamation, 56 nations had already established EEZ's on the basis of the same distance. This proclamation is consistent with the Law of the Sea Convention.

Two major developments in the minerals policy area occurred in 1984. The National Strategic Materials and Minerals Program Advisory Committee was created and the National Critical Materials Act of 1984 was enacted. The committee is responsible for providing guidance in the implementation of the National Materials and Minerals Program Plan of 1982, identifying national minerals needs and making policy recommendations on peacetime and defense mobilization responsibilities for strategic and critical materials. The committee, which will report to the Secretary of the Interior, is composed of 25 representatives from academia, business, State government, and the environmental community. The National Critical Materials Act of 1984 established a National Critical Materials Council that has the authority and responsibility for establishing critical materials policy and for coordinating and implementing that policy.

The Deficit Reduction Act of 1984 contained three provisions directly applicable to nonfuel minerals. First, this tax law increases the amount of nondeductible expenditures for mineral exploration and development from 15 percent to 20 percent of such expenditures. Second, the law exempts from excise tax, as imposed under the Hazardous Substance Response Revenue Act of 1980, certain chemicals that may occur during the processing of copper, lead, and zinc. The third provision stipulates tax accounting methods for handling certain mine reclamation and closing costs that had previously been controversial.

Financial information.--Financial data for all mining corporations (metallic and nonmetallic) and all of their corporate operations based on the Federal Trade Commission's Quarterly Financial Report for Manufacturing, Mining, and Trade, covering 1980-84, are presented in the following tabulation:

Item	1980	1981	1982	1983	1984
Revenues---------million dollars--	55,316	68,094	45,928	41,429	44,561
Net income-----------------do----	6,230	6,990	3,065	1,217	1,089
Ratio of net income to revenue----------------percent--	11.3	10.3	6.7	2.9	2.4
Ratio of net income to net worth------------------percent--	4.8	4.6	2.4	1.5	1.3

Profitability in mining, reflected in the net income figures in the above tabulation, has dropped by more than 80 percent during 1980-84. Recent problems of low demand and low prices, which have contributed to production cutbacks in several large operations in the industry, partially account for the decline in mining profits. For a number of years, levels of profitability for the mineral-related industries have tended to be below those for all manufacturing. According to the 1984 U.S. Industrial Outlook, a major industry review ranks the mining industry among the 10 lowest rated industries on the basis of percentage change in profits.

Mining is the most capital intensive of all industries. The problem of obtaining sufficient capital, particularly to satisfy requirements of environmental and health and safety legislation, has been of major concern in the industry for some time. As a percentage of total capital investment, the mining industry spends about one-third more on pollution control compliance than any other industry--about 8 percent compared to 6 percent for all industries. 1/ The combined costs of installation and operation of pollution control equipment and the effects of restricted access to mineralized lands, regulatory delays, and the uncertainties of new regulations reduce incentive for investments in the minerals industry.

Most of the mining industry remains constrained by high interest rates, low use of current production capacity, and uncertainty about the effects of high Federal budget deficits. Realignment of operations to adjust to shrinking markets continues to result in shutdowns of some operations and sluggish operations for others.

U.S. market

Trade in the ores and concentrates and other metal-bearing materials covered in this summary supplement registered a deficit in 1984 amounting to $814 million (table 2), down from $917 million in 1980. Imports decreased 35 percent to $1.5 billion in 1984 from $2.3 billion in 1980, whereas exports decreased 50 percent to $656 million in 1984 from $1.3 billion in 1980.

1/ U.S. Department of Commerce, U.S. Industrial Outlook, 1982.

Table 2.--Ores and concentrates: U.S. imports for consumption, exports of domestic merchandise, and trade balance of ores and concentrates and other metal-bearing materials, 1984

(In thousands of dollars)

Metal	Imports	Exports	Trade balance
Antimony	6,822	1/	(6,822)
Bauxite	339,736	12,735	(327,001)
Beryllium	1,177	1/	(1,177)
Chrome	15,485	2,957	(12,528)
Cobalt	11	1/	(11)
Columbium	13,582	1/	(13,582)
Copper	12,450	80,997	68,547
Iron ore	537,642	239,257	(298,385)
Lead	12,457	10,112	(2,345)
Manganese	14,217	15,727	1,510
Mercury	44	1/	(44)
Molybdenum	19,624	242,770	223,146
Nickel	111,973	1/	(111,973)
Precious metals:			
Gold	65,784	545	(65,239)
Platinum group metals	60	3,949	3,889
Silver	88,462	5,344	(83,118)
Rare-earth metals	2,202	16,558	14,356
Tantalum	25,900	0	(25,900)
Tin	20,862	1/	(20,862)
Titanium	88,833	1,936	(86,897)
Tungsten	51,715	1,240	(50,475)
Vanadium	549	109	(440)
Zinc	32,517	18,700	(13,817)
Zirconium	7,548	2,647	(4,901)
Total	1,469,652	655,583	(814,069)

1/ Negligible.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Antimony (TSUS items 601.03-603.10)

U.S. industry

As in 1980, nearly all domestic antimony mining during 1981-83 was carried out by two companies, one in Idaho and the other in Montana. In 1984, the Montana mine closed temporarily. Additional antimony was recovered as antimonial lead from the smelting of lead ores. The industry employed 130 persons during 1980-84.

Economic factors affecting antimony production include environmental controls, the mineralogy of ore occurrence, and the geographic separation of producing and consuming firms. Environmental considerations for domestic production of antimony are similar to those involving mining and processing lead and lead-silver ores. Problems are minimal, as emissions and effluents are controlled at the processing plants. 1/ Presently known antimony deposits in the United States are smaller and less economical than those in foreign countries. The potential of large foreign suppliers is seen as a deterrent to the development of domestic resources. 2/

U.S. customs treatment

The rates of duty applicable to imports of antimony ores and metal-bearing products covered by this supplement appear in table 3. The items eligible for preferential treatment under the Generalized System of Preferences (GSP) are also shown in this table. Imports of antimony ores and antimony-bearing materials are eligible for duty-free treatment under the Caribbean Basin Economic Recovery Act (CBERA). An excerpt from the Tariff Schedules of the United States Annotated (1985) (TSUSA) covering antimony ores and metal-bearing products and an explanation of the various rates of duty are provided in appendix A.

1/ U.S. Bureau of Mines, p. 9, Mineral Commodity Profile 1985.
2/ U.S. Bureau of Mines, p. 9, Mineral Facts and Problems 1980.

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Table 3.--Antimony: U.S. rates of duty, by TSUS item

(Cents per pound)

TSUS item No. 1/	Description	Pre-MTN col. 2 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.03	Antimony ore	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
603.10A	Antimony, needle or liquidated	0.1¢	3/	3/	3/	3/	3/	3/	3/	3/	0.25¢.

1/ The designation "A" indicates that the item is currently designated as an eligible article for duty-free treatment under the U.S. GSP and that all beneficiary developing countries are eligible for GSP.

2/ Rate effective prior to Jan. 1, 1980.

3/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Consumption of antimony ore and metal-bearing materials decreased from 5,586 short tons in 1980 to 3,332 short tons in 1982, then increased to 4,875 short tons in 1984 (table 4). The decline in consumption was due to the economic recession and reduced demand in the automotive and construction industries. The overall improvement in the domestic economy lead to increased use of antimony in ceramics, glass, and flame retardants. Imports accounted for 88.6 percent of domestic consumption in 1984, down from 93.9 percent in 1980.

U.S. production

Domestic mine production was particularly low (343 short tons) in 1980 owing to an 8-month strike at a mine in Idaho (table 4). Production increased to 646 short tons in 1981, but fell to 503 short tons in 1982, as one mine in Idaho suspended operations from June until November due to depressed silver prices (antimony is a byproduct of silver ore). In 1983, as the Idaho mine returned to full production, total domestic production rose to 838 short tons. In 1984, domestic production fell to 557 short tons as the Montana mine closed temporarily.

U.S. trade

U.S. imports.--Imports of antimony ore and metal-bearing materials decreased from 5,243 short tons of contained antimony ($11.7 million) in 1980 to 2,788 short tons ($2.4 million) in 1983, then increased to 4,318 short tons ($6.8 million) in 1984 (table 5). The decrease in imports during 1980-83 is attributed to the decline in demand for antimony metal and compounds. Imports rose in 1984 as demand increased and domestic production was limited due to the closed mine. The principal exporter to the United States during 1984 was Bolivia, followed by Thailand, Mexico, and the Republic of South Africa. During 1981-84, imports from Canada were below their previous levels because one of Canada's mines was closed due to poor antimony market conditions. Very little, if any, antimony ore and metal-bearing materials were imported under the GSP during 1980-84 (less than 1 percent of the imports during this period were GSP-eligible needle or liquidated antimony).

Transportation costs of antimony ores can be significant depending on the source of ore and mode of transportation used. Estimated transportation costs associated with U.S. imports of antimony averaged over 8 percent of the customs value during 1980-84. Domestic ores are generally processed relatively near the mine site; foreign ores are moved by ocean freight and then by inland shipping via rail or truck, depending on the location of the smelter and the size of the lot.

U.S. exports.--Exports of antimony metal-bearing materials are unknown since they are not separately reported in official U.S. statistics. However, they are considered to be negligible by the industry.

Table 4. 1/--Antimony ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in short tons, contained weight; value in thousands of dollars; unit value per short ton, contained weight)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	2/ 343	3/	5,243	2/ 5,586	2/ 93.9
1981	646	3/	5,196	5,842	88.9
1982	503	3/	2,829	3,332	84.9
1983	838	3/	2,788	3,626	76.9
1984	557	3/	4,318	4,875	88.6
			Value		
1980	4/	3/	11,674	4/	-
1981	4/	3/	9,147	4/	-
1982	4/	3/	4,401	4/	-
1983	4/	3/	2,381	4/	-
1984	4/	3/	6,822	4/	-
			Unit value		
1980	-	-	$2,226.51	-	-
1981	-	-	1,760.39	-	-
1982	-	-	1,555.70	-	-
1983	-	-	853.95	-	-
1984	-	-	1,579.81	-	-

1/ Table 1 in the original summary.

2/ Revised.

3/ Exports not separately reported in official U.S. statistics but are considered to be negligible.

4/ Not available.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

Table 5. 1/--Antimony ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (short tons, contained weight)				
Bolivia-----	2,336	2,656	1,682	1,196	1,253
Thailnd-----	107	150	0	471	920
Mexico------	1,252	883	485	632	970
Rep Saf-----	398	297	71	444	596
Chile-------	56	302	0	22	188
China M-----	0	58	42	0	177
Peru--------	0	21	0	0	84
Hondura-----	6	0	0	0	96
All other---	1,088	829	549	23	34
Total---	5,243	5,196	2,829	2,788	4,318
	Value (1,000 dollars)				
Bolivia-----	6,608	4,916	2,724	1,158	2,016
Thailnd-----	208	226	-	598	1,541
Mexico------	1,501	1,318	598	400	1,288
Rep Saf-----	997	454	125	146	1,079
Chile-------	131	593	-	20	279
China M-----	-	90	58	-	273
Peru--------	-	38	-	-	161
Hondura-----	2	-	-	-	119
All other---	2,228	1,511	897	59	67
Total---	11,674	9,147	4,401	2,381	6,822
	Unit value (per short ton, contained weight)				
Bolivia-----	$2,828.81	$1,850.86	$1,619.36	$967.82	$1,608.61
Thailnd-----	1,943.53	1,508.45	-	1,270.68	1,674.64
Mexico------	1,199.12	1,492.46	1,231.96	633.08	1,328.09
Rep Saf-----	2,503.93	1,529.93	1,757.87	328.69	1,810.70
Chile-------	2,331.68	1,964.74	-	890.91	1,483.05
China M-----	-	1,557.50	1,382.79	-	1,542.00
Peru--------	-	1,811.43	-	-	1,910.81
Hondura-----	250.00	-	-	-	1,240.44
All other---	2,047.41	1,822.50	1,633.76	2,571.83	1,958.71
Average--	2,226.51	1,760.39	1,555.70	853.95	1,579.81

1/ Table number 2 in the original summary.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Bauxite (TSUS items 521.17, 601.06, and 603.05)

U.S industry

Bauxite was mined by five companies at six open pit locations in Arkansas, Alabama, and Georgia in 1984, compared with six companies operating nine open pit mines in 1980. Arkansas is the major producer of bauxite. Bauxite is used in the production of aluminum. In 1983, for the first time since bauxite mining began in the United States, virtually no domestic bauxite was mined for use in the production of aluminum metal due to the depressed aluminum demand that was a result of the recession. According to the U.S. Bureau of Mines, mine employment in the bauxite industry steadily declined from 314 persons in 1980 to 155 persons in 1983, before rising to an estimated 180 persons in 1984.

U.S. customs treatment

The U.S. rates of duty applicable to imports of bauxite and aluminum metal-bearing materials covered by this supplement appear in table 6. Imports of these items are eligible for duty-free treatment under the CBERA. An excerpt from the TSUSA covering bauxite and aluminum metal-bearing materials and an explanation of the various rates of duty are provided in appendix A.

Table 6.--Bauxite: U.S. rates of duty, by TSUS items

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
521.17	Calcined bauxite 2/	Free	3/	3/	3/	3/	3/	3/	3/	3/	$1 per ton.
601.06	Bauxite	Free	3/	3/	3/	3/	3/	3/	3/	3/	$1 per ton.
603.05	Aluminum dross and skimmings	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.

1/ Rate effective prior to Jan. 1, 1980.

2/ Included for statistical purposes.

3/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Reported consumption of bauxite and aluminum metal-bearing materials declined 44 percent during 1980-83, from 16.0 million metric tons ($448.0 million) in 1980 to 9.0 million metric tons ($253.0 million) in 1983 (table 7). The downward trend in consumption during 1980-83 reflected the global economic recession's adverse effect on the world aluminum metal market and the downturn in world aluminum metal demand (particularly in the construction and transportation consuming sectors). Consumption increased to an estimated 10.8 million metric tons ($338.1 million) in 1984 as demand for primary aluminum recovered. The portion of U.S. consumption supplied by imports fluctuated during 1980-1984, reaching a peak of 122 percent in 1982 and a low of 89 percent in 1980. In 1984, the ratio of imports to consumption was 99 percent.

U.S. production

Mine production declined 58 percent during 1980-83, falling from 1.6 million metric tons ($22.4 million) in 1980 to 679,000 metric tons ($11.3 million) in 1983, before rising to 811,000 metric tons ($11.1 million) in 1984 (table 7). Domestic bauxite production in 1983 was at its lowest level since 1940. The principal factors in the decline were the closing of a metal-grade mine in Arkansas in March 1982 and continued depressed demand in the metals and glassmaking industries for refractory bauxite used in lining furnaces, kilns, and ladles. Production increased in 1984 as demand for primary aluminum increased. U.S. bauxite resources are currently estimated at 300 to 325 million metric tons, or 0.8 percent of the world's bauxite resources. The U.S. accounted for 1.0 percent of the world's mine production of bauxite in 1984.

Bauxite remained on the critical and strategic materials list during 1980-84, and several stockpile changes occurred during that period. In October 1981, the General Services Administration (GSA) purchased 26,000 tons of calcined refractory-grade bauxite from China for delivery in 1982. In 1982, the GSA purchased 1.6 million tons of metal-grade bauxite from the Jamaican Government for delivery in 1982 and paid for it in a combination of cash, exchange of excess stockpile commodities, and barter of agricultural commodities. In March 1983, the GSA contracted with the Government of Jamaica to purchase 1 million tons of metal-grade bauxite for delivery in 1983. A second contract was signed for the acquisition of 400,000 tons of bauxite in a fiscal year 1983 exchange of surplus U.S. agricultural products. In 1984, two other contracts were signed for the acquisition of 75,000 tons of calcined, refractory-grade bauxite from China, scheduled to be delivered to an Illinois stockpile, site in 1984 and 1985. The status of the stockpile, as of November 30, 1984, 1/ was as follows (in thousands of dry metric tons):

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Material	Goal	Total inventory
Bauxite--abrasive grade	1,016	0
Bauxite--metal grade:		
Jamaica type	21,337	11,638
Suriname type	6,198	5,385
Bauxite--refractory grade, calcined	1,422	203

U.S. trade

U.S. imports.--Imports of bauxite and aluminum metal-bearing materials declined 43 percent during 1980-83, dropping from 14.3 million metric tons ($432.4 million) in 1980 to 8.1 million metric tons ($252.2 million) in 1983 (table 8). The decline in imports resulted primarily from the reduced operating rates of U.S. alumina plants, which refine approximately 90 percent of the bauxite consumed in the United States into various forms of alumina. At yearend 1983, U.S. alumina plants were operating at approximately 35 to 40 percent of total annual capacity. Imports rose to 10.7 million metric tons ($339.7 million) in 1984 as alumina plants began operating at higher capacity rates due to increased demand for primary aluminum. The principal supplying countries during 1980-84 were Jamaica, Guinea, Surinam, and Brazil, major bauxite resource countries.

Ocean transportation cost is a major determinant of the U.S.-delivered price of bauxite. Transportation costs, which amount to almost one-third (29 percent) of the customs value of bauxite, are partially a result of the U.S. industry's high reliance on foreign supply sources and escalating shipping costs.

U.S. exports.--Exports of bauxite and aluminum metal-bearing materials rose from 30,000 metric tons ($6.8 million) in 1980 to 94,000 metric tons ($12.7 million) in 1984 (table 9). U.S. exports as a percentage of production rose from 1.9 percent in 1980 to 11.6 percent in 1984. The major export markets in 1980-84 were Mexico and Canada. Exports of bauxite to Mexico are believed to be transshipments of refractory and abrasive-grade bauxite imported in bulk from China by a U.S. firm. Exports of bauxite to Canada are believed to be abrasive-grade bauxite manufactured into intermediate abrasive materials that are subsequently used in U.S. plants to manufacture abrasive end products.

The U.S. trade deficit in bauxite and aluminum metal-bearing materials declined from $425.6 million in 1980 to $241.7 million in 1983. The deficit rose to $327.0 million in 1984, but remained well under the 1980 value.

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[1] Federal Emergency Management Agency (FEMA) and the U.S. Bureau of Mines.

Table 7. 1/--Bauxite and aluminum metal-bearing material: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in thousands of metric tons; value in thousands of dollars; unit value per metric ton)

Year	Production	Exports	Imports	Reported consumption	Ratio (percent) of imports to consumption 2/
			Quantity		
1980	1,559	3/ 30	14,275	15,962	89
1981	1,510	46	14,212	13,525	105
1982	732	56	11,241	9,217	122
1983	679	87	8,118	8,966	91
1984	811	94	10,675	4/ 10,759	99
			Value		
1980	22,353	6,761	432,407	447,999	97
1981	26,489	8,090	443,267	461,666	96
1982	12,334	8,545	383,838	387,627	99
1983	11,309	10,561	252,226	252,974	100
1984	4/ 11,111	12,735	339,736	338,112	100
			Unit value		
1980	$14.34	3/$224.27	$30.29	-	-
1981	17.54	176.35	31.19	-	-
1982	16.85	153.48	34.15	-	-
1983	16.66	121.68	31.07	-	-
1984	4/ 13.70	135.74	31.83	-	-

1/ Table 3 in the original summary.

2/ The ratio of imports to consumption is overstated due to the aggregation of products (refractory-grade and metal-grade) and the reexport of some material of foreign origin.

3/ Revised.

4/ Estimated by U.S. Bureau of Mines.

Source: Compiled from official statistics of the U.S. Department of Commerce and the U.S. Bureau of Mines.

Table 8. 1/ --Bauxite and aluminum metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (metric tons)				
Jamaica-----	7,195,358	6,406,934	5,007,317	3,337,283	4,766,746
Guinea------	2,836,718	3,545,517	4,197,742	3,600,079	3,717,674
Guyana------	783,671	598,897	308,612	255,351	374,210
Brazil------	777,389	1,265,013	512,111	554,715	786,466
Surinam-----	1,417,503	1,112,369	444,378	286,445	325,935
Austral-----	16,200	15,415	9,730	7,679	584,776
China M-----	116,806	176,478	94,741	65,072	111,532
Canada------	2,153	2,659	1,749	6,063	6,471
All other---	1,129,557	1,088,799	664,435	5,626	960
Total---	14,275,355	14,212,081	11,240,815	8,118,313	10,674,770
	Value (1,000 dollars)				
Jamaica-----	196,107	173,431	177,405	97,413	149,864
Guinea------	73,470	93,543	115,448	95,363	107,249
Guyana------	52,697	39,249	19,646	18,309	24,362
Brazil------	17,917	33,779	15,092	17,098	22,292
Surinam-----	48,782	49,470	21,963	14,210	12,579
Austral-----	1,147	1,561	968	1,117	11,475
China M-----	10,825	21,031	10,320	6,687	9,954
Canada------	526	441	343	1,439	1,492
All other---	30,936	30,763	22,653	590	470
Total---	432,407	443,267	383,838	252,226	339,736
	Unit value (per unit) 2/				
Jamaica-----	-	-	-	-	-
Guinea------	-	-	-	-	-
Guyana------	-	-	-	-	-
Brazil------	-	-	-	-	-
Surinam-----	-	-	-	-	-
Austral-----	-	-	-	-	-
China M-----	-	-	-	-	-
Canada------	-	-	-	-	-
All other---	-	-	-	-	-
Average--	30.29	31.19	34.15	31.07	31.83

1/ Table number 5 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 9. 1/--Bauxite and aluminum metal bearing material: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (metric tons)				
Mexico	9,410	24,008	28,548	65,026	56,620
Canada	18,544	18,932	19,474	21,474	26,515
Brazil	7	74	5	0	7,299
Japan	118	16	2	10	2,928
Belgium	8	0	0	18	244
Finland	18	87	73	37	37
U King	210	646	58	1	38
Chile	2	12	10	0	43
All other	1,831	2,098	7,503	226	90
Total	30,148	45,873	55,673	86,792	93,814
	Value (1,000 dollars)				
Mexico	1,421	3,631	4,567	7,192	7,011
Canada	3,819	2,934	2,633	3,142	3,611
Brazil	3	15	4	-	1,400
Japan	26	10	2	14	555
Belgium	4	-	-	13	46
Finland	6	23	14	29	31
U King	92	215	12	1	30
Chile	2	20	15	-	19
All other	1,388	1,242	1,298	169	32
Total	6,761	8,090	8,545	10,561	12,735
	Unit value (per unit) 2/				
Mexico	-	-	-	-	-
Canada	-	-	-	-	-
Brazil	-	-	-	-	-
Japan	-	-	-	-	-
Belgium	-	-	-	-	-
Finland	-	-	-	-	-
U King	-	-	-	-	-
Chile	-	-	-	-	-
All other	-	-	-	-	-
Average	224.27	176.35	153.48	121.68	135.74

1/ Table number 4 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Beryllium (TSUS item 601.09)

U.S. industry

In 1984, beryllium ore was mined by one company in Utah, as in 1980. Mine employment remained unchanged at approximately 25 persons.

U.S. customs treatment

The rates of duty applicable to imports of beryllium ore as covered by this supplement appear in table 10. Imports of these items are eligible for duty-free treatment under the CBERA. An excerpt from the TSUSA covering beryllium ore and an explanation of the various rates of duty are provided in appendix A.

Table 10.--Beryllium: U.S. rates of duty, by TSUS items

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--				Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--Continued				Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.09	Beryllium ore	Free	2/	2/	2/	2/	2/	2/	2/	2/	Free.

1/ Rate effective prior to Jan. 1, 1980.
2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Reported consumption of beryllium ore declined 37 percent from 8,508 short tons in 1980 to 5,387 short tons in 1982, before rising 67 percent to 9,003 short tons in 1984 (table 11). The decline in consumption reflected the completion or termination of defense, aerospace, and other programs where beryllium is used in master alloys or as an oxide. Consumption increased in 1983 and 1984 as numerous end-use markets rebounded, particularly the aerospace, nuclear, and electronic markets. The portion of U.S. consumption supplied by imports rose from 20 percent in 1980 to 49 percent in 1982, before declining to 15 percent in 1984.

U.S. production

Although production data for beryllium ore are unavailable, mine production is reported to have trended upward and then stabilized at high levels during 1980-82, before declining in 1983 and rising again in 1984, according to the U.S. Bureau of Mines. The sole domestic producer initiated a program in 1981 to stimulate domestic and foreign beryl mining to extend the life of existing bertrandite ore reserves and to make use of its existing beryl ore processing capacity. There have been no changes in the U.S. Government stockpile for beryllium. The United States has beryllium resources that are currently estimated at 52,000 short tons, or 6.5 percent of the world's beryllium resources.

U.S. trade

U.S. imports.--Imports of beryllium ore rose from 1,703 short tons ($1.2 million) in 1980 to 2,651 short tons ($3.2 million) in 1982, before declining to 1,332 short tons ($1.2 million) in 1984 (table 12). Imports of beryllium ore supplemented the domestic supply. The principal supplying countries in 1980-84 were the People's Republic of China and Brazil, both major beryllium ore sources. Transportation costs account for an estimated 9 percent of the customs value of beryllium ores and concentrates and are generally not a significant factor in the trade of these products.

U.S. exports.--Export statistics are not separately reported, however, U.S. exports of beryllium ore are believed to be negligible because all domestic mine production is eventually consumed by the producer in the production of metal products.

Table 11. 1/--Beryllium ore: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in short tons; value in thousands of dollars; unit value per short ton)

Year	Production	Exports	Imports	Reported consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	2/	3/	1,703	4/ 8,508	20
1981	2/	3/	2,139	8,141	26
1982	2/	3/	2,651	5,387	49
1983	2/	3/	2,193	6,989	31
1984	2/	3/	1,332	9,003	15
			Value		
1980	5/	3/	1,168	5/	5/
1981	5/	3/	2,002	5/	5/
1982	5/	3/	3,215	5/	5/
1983	5/	3/	2,755	5/	5/
1984	5/	3/	1,177	5/	5/
			Unit value		
1980	-	-	$685.61	-	-
1981	-	-	936.07	-	-
1982	-	-	1,212.68	-	-
1983	-	-	1,256.35	-	-
1984	-	-	883.91	-	-

1/ Table 6 in the original summary.

2/ Production is withheld to avoid the disclosure of individual company confidential data.

3/ Exports are not separately reported in official U.S. statistics but are considered to be negligible.

4/ Revised figure.

5/ Not available.

Source: Compiled from official statistics of the U.S. Department of Commerce and the U.S. Bureau of Mines.

Table 12. 1/ --Beryllium ore: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (short tons)				
Brazil------	571	839	945	1,006	744
China M-----	862	953	975	788	264
Switzld-----	0	0	118	165	112
Zimbabw-----	0	0	38	19	86
Rep Saf-----	26	104	226	128	93
Portugl-----	44	20	22	0	33
Hg Kong-----	0	38	127	32	0
Austral-----	0	0	2	14	0
All other---	200	185	198	41	0
Total---	1,703	2,139	2,651	2,193	1,332
	Value (1,000 dollars)				
Brazil------	451	874	1,261	1,217	680
China M-----	562	825	1,041	1,031	238
Switzld-----	-	-	156	201	98
Zimbabw-----	-	-	58	21	72
Rep Saf-----	14	115	298	188	58
Portugl-----	25	16	33	-	32
Hg Kong-----	-	41	159	40	-
Austral-----	-	-	3	26	-
All other---	117	131	206	32	-
Total---	1,168	2,002	3,215	2,755	1,177
	Unit value (per short ton) 2/				
Brazil------	-	-	-	-	-
China M-----	-	-	-	-	-
Switzld-----	-	-	-	-	-
Zimbabw-----	-	-	-	-	-
Rep Saf-----	-	-	-	-	-
Portugl-----	-	-	-	-	-
Hg Kong-----	-	-	-	-	-
Austral-----	-	-	-	-	-
All other---	-	-	-	-	-
Average--	685.61	936.07	1,212.68	1,256.35	883.91

1/ Table number 7 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Chrome (TSUS item 601.15)

U.S. producers

There is no known domestic mine production of chromite. The U.S. Geological Survey has an ongoing study of the mineral potential of Alaska, the purpose of which is to determine the level of natural resource deposits, including chromite. In addition, a domestic metals producer is completing drilling for chromite deposits at Red Mountain on the Kenai Peninsula, Alaska, and has entered into a 7-year exploration agreement with another firm.

In California, two chromite-related mining projects are in exploratory stage in the California-Oregon border region and near Del Norte County, California. In 1983, three companies formed a three-way partnership to further evaluate the deposits of a Stillwater, Montana, complex, which contains major deposits of platinum, palladium, chromium, and nickel.

U.S. customs treatment

The rates of duty applicable to chrome ore appear in table 13. An excerpt from the TSUSA covering chrome ore and an explanation of the various rates of duty are provided in appendix A. All items are eligible for duty-free treatment under the CBERA.

Table 13.--Chrome: U.S. rates of duty, by TSUS item

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.15	Chrome ore	Free	2/	2/	2/	2/	2/	2/	2/	2/	Free.

1/ Rate effective prior to Jan. 1, 1980.

2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Reported consumption decreased due to the decline in steel making, from 358,000 short tons of contained chromite in 1980 to 301,000 short tons in 1983, before increasing 30 percent to 390,000 tons in 1984 (table 14). Of the total chromite consumed in 1984, the metallurgical and chemical industry used 79 percent, and the refractory industry, used 21 percent. The largest decline in consumption during 1980-84 was reported in the steel industry. As there was no reported domestic production during 1980-84, the United States depended on imports to meet all of its domestic requirements.

U.S. production

There was no chromite mined in the United States during 1980-84 due to the virtual lack of known commercial chromite reserves. The potential for development of domestic production facilities in the short run is not favorable.

The status of the stockpile, as of November 30, 1984, 1/ was as follows:

Material	Goal	Total inventory	Average chromium content	Excess to goal authorized for disposal	Sales, 11 months
Chromite:					
Metallurgical grade	3,200	1,957	28.6%	-	-
Chemical grade------	675	242	28.6%	-	-
Refractory grade----	850	391	-	-	-

In addition to the data shown, the stockpile contained the following nonstockpile-grade materials: 531,219 tons of metallurgical-grade chromite.

U.S. trade

U.S. imports.--Because of a decreased demand for steel, U.S. imports declined from 411,000 short tons ($56.5 million) of chromite (contained metal weight) in 1980 to 86,000 short tons ($10.4 million) in 1983. In 1984, due to the increased demand in steelmaking, U.S. imports increased to 134,000 short tons ($15.5 million) (table 15). The leading suppliers during 1980-84 continued to be the Republic of South Africa and the Philippines, supplying approximately 81 percent and 13 percent, respectively, in 1984. The transportation cost of chrome ore from South Africa to U.S. ports averages approximately 20 percent of the f.o.b. U.S. port value of the product. Transportation is a critical but unavoidable cost factor in the purchase of chrome ore since the United States relies wholly on imported ores to supply its steel industry.

1/ FEMA and the U.S. Bureau of Mines.

No products were imported during 1984 from countries designated as beneficiary countries for purposes of the CBERA.

U.S. exports.--Exports representing reexported chromite increased due to accumulated inventories from 6,000 short tons ($1.4 million) of contained chromite in 1980 to 71,000 short tons ($5.9 million) in 1981, and then decreased to 8,000 short tons ($1.6 million) in 1982. Exports increased 400 percent during 1983 and 1984 to 55,000 short tons ($3.0 million) in 1984 (table 16). The major markets during 1980-83 continued to be Mexico and Canada, averaging 54 percent and 42 percent, respectively, of U.S. exports. However exports to West Germany jumped from 0 in 1983 to 24,226 short tons (44 percent of U.S. exports) in 1984 and exports to Sweden rose to 16,459 short tons (30 percent of U.S. exports) due to increased steel demand in Western Europe during 1984. The trade deficit in chrome ore between 1980 and 1981 averaged approximately $30 million per year, declining to $12 million in 1984.

Table 14. 1/--Chrome ore: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in thousands of short tons, contained weight; value in thousands of dollars; unit value per short ton)

Year	Production	Exports	Imports	Reported consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	0	6	411	2/ 358	3/ 115
1981	0	71	368	349	3/ 105
1982	0	8	209	232	90
1983	0	11	86	307	29
1984	0	55	134	390	34
			Value		
1980	-	1,447	56,467	4/	4/
1981	-	5,893	49,948	4/	4/
1982	-	1,574	29,670	4/	4/
1983	-	1,874	10,392	4/	4/
1984		2,957	15,485	4/	4/
			Unit value		
1980	-	$244.79	$137.39	-	-
1981	-	83.39	125.65	-	-
1982	-	192.71	142.00	-	-
1983	-	167.88	120.60	-	-
1984		53.83	115.28		

1/ Table 8 in the original summary.

2/ Revised.

3/ The drawing down of consumer stocks in various years may result in import to consumption ratios exceeding 100 percent.

4/ Not available.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

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Table 15 1/--Chrome ore: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (short tons, contained weight)				
Rep Saf------	178,203	210,505	123,460	67,049	108,252
Phil R-------	45,382	52,392	23,111	4,160	16,934
Finland------	15,584	24,191	13,714	0	4,940
N Caldn------	0	0	0	0	1,944
Canada-------	0	132	0	2,164	2,256
Fr Germ------	0	0	0	0	0
Madagascar----	19,910	8,179	19,199	10,423	0
Albania------	38,900	5,389	1,642	2,336	0
All other---	113,112	67,414	27,862	40	0
Total---	410,996	368,203	208,949	86,168	134,326
	Value (1,000 dollars)				
Rep Saf------	19,009	23,779	14,666	6,944	9,758
Phil R-------	11,740	11,744	5,819	1,328	4,504
Finland------	2,148	3,346	2,207	-	535
N Caldn------	-	-	-	-	357
Canada-------	-	30	-	327	323
Fr Germ------	-	-	-	2	8
Madagascar----	3,224	1,056	2,683	1,362	-
Albania------	6,619	1,192	299	422	-
All other---	13,531	8,306	3,996	7	-
Total---	56,467	49,748	29,670	10,392	15,495
	Unit value (per short ton, contained weight) 2/				
Rep Saf------					
Phil R-------					
Finland------					
N Caldn------					
Canada-------					
Fr Germ------					
Madagascar----					
Albania------					
All other---					
Average---	137.39	125.65	142.00	120.60	115.25

1/ Table number 10 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 16. 1/--Chrome ore: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (short tons, contained weight)				
Mexico	3,910	17,191	5,396	6,784	11,696
Fr Germ	0	23	20	0	24,225
Sweden	0	0	0	0	16,495
Canada	1,716	52,142	1,666	4,213	1,429
Argent	0	338	1,079	0	1,102
Italy	0	0	0	0	20
Israel	0	3	0	0	26
Japan	0	0	0	6	8
All other	85	1,014	24	29	13
Total	5,911	70,671	8,165	11,032	54,927
	Value (1,000 dollars)				
Mexico	569	2,552	816	1,061	1,397
Fr Germ	-	72	165	-	653
Sweden	-	-	-	-	445
Canada	832	2,833	400	768	243
Argent	-	38	176	-	171
Italy	-	-	-	-	19
Israel	-	1	-	-	14
Japan	-	3	-	3	4
All other	46	394	16	42	11
Total	1,447	5,893	1,574	1,874	2,957
	Unit value (per short ton, contained weight) 2/				
Mexico					
Fr Germ					
Sweden					
Canada					
Argent					
Italy					
Israel					
Japan					
All other					
Average	244.79	83.39	192.71	167.88	53.83

1/ Table number 9 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Cobalt (TSUS item 601.18)

U.S. industry

There was no domestic mine production of cobalt ore during 1980-84 due to the relatively low grade of U.S. resources.

U.S. customs treatment

The rates of duty applicable to imports of cobalt ore as covered by this supplement are shown in table 17. Imports of cobalt ore are eligible for duty-free treatment under CBERA. An excerpt from the TSUSA covering cobalt and an explanation of the various rates of duty are provided in appendix A.

Table 17.--Cobalt: U.S. rates of duty, by TSUS items

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.18	Cobalt ore	Free	2/	2/	2/	2/	2/	2/	2/	2/	Free.

1/ Rate effective prior to Jan. 1, 1980.

2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

The figures in table 18 represent reported consumption for cobalt metal production of imported cobalt-containing nickel-copper and nickel mattes, which are produced as byproducts of nickel and copper refining. There is no domestic consumption of cobalt in the form of ores and concentrates. Reported consumption of cobalt fluctuated during 1980-84, declining from 1.0 million pounds in 1980 to 893,000 pounds in 1981 before increasing to 1.0 million pounds in 1982. In 1983, consumption declined to a low of 206,000 pounds, before rising to 230,000 pounds in 1984. Imports as a percent of reported consumption rose to 7 percent in 1983, before falling to less than 1 percent in 1984. The decline in 1983 from relatively stable consumption levels during 1980-82 reflected the sole domestic consumer's transfer of refining operations to Canada from the United States. The consumption increase in 1984 reflects increased use of cobalt ore in the manufacture of tungsten carbide, magnets, and welding materials.

U.S. production

There was no domestic mine production of cobalt during 1980-84. Domestic exploration efforts have continued, while plans to bring certain mines onstream were canceled, reportedly due to high interest rates, low cobalt prices and consumption, and limited prospects for price support legislation in the Congress. Under the authority of title III of the Defense Production Act, the U.S. Air Force issued a draft request for proposals (RFP) in August 1983 for the purpose of establishing domestic cobalt production. Plans call for a final RFP, which may result in one or more pilot plants and possibly a full scale cobalt production facility. The United States has cobalt resources currently estimated at 950,000 tons, or 10.3 percent of the world's cobalt resources.

U.S. trade

U.S. imports.--Imports fluctuated during 1980-84, reaching a peak of 33,547 pounds ($274,000) in 1982 and a low of 114 pounds ($11,000) in 1984 (table 19). The principal supplying countries during 1980-84 were Belgium (which processes Zairian metal), West Germany, Mexico, Zambia, and Canada. Zaire and Zambia account for more than one-half of the world's supply, and about one-half of the U.S. supply is derived from these sources. Belgium, for example, is the largest producer of processed cobalt and the largest U.S. source. It obtains its raw material from Zaire, however, and exports one-half of this production to the United States. Imports are unstable because of the limitations on availability from the major sources largely caused by: (1) the high costs of recovery given the relatively limited concentration of higher grade deposits (and corresponding lower mining costs) in a few areas of the world; (2) limited production capacity because cobalt's byproduct status in copper and nickel mining places an upper limit on the amount of cobalt that can that be produced; (3) continuing transportation problems in Zambia and Zaire due to the dislocation from cobalt plants to major transportation routes; (4) increased world cobalt demand; and (5) the small and steadily declining number of cobalt producers. Transportation costs are not a significant factor in the trade of these materials, accounting for about 5 percent of the customs value of cobalt ores and concentrates.

U.S. exports.--U.S. exports are not separately reported in official statistics but are believed to be negligible due to nonexistent domestic production of cobalt ore.

Table 18. 1/--Cobalt ore: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in thousands of pounds; value in thousands of dollars; unit value per pound)

Year	Production	Exports	Imports	Reported consumption 2/	Ratio (percent) of imports to consumption
			Quantity		
1980	0	3/	12	1,000	1
1981	0	3/	5	893	1
1982	0	3/	34	1,016	3
1983	0	3/	15	206	7
1984	0	3/	0	4/ 230	0
			Value		
1980	5/	3/	325	5/	5/
1981	5/	3/	50	5/	5/
1982	5/	3/	274	5/	5/
1983	5/	3/	73	5/	5/
1984	5/	3/	11	5/	5/
			Unit value		
1980	-	-	$27.98	-	-
1981	-	-	9.63	-	-
1982	-	-	8.17	-	-
1983	-	-	5.05	-	-
1984	-	-	97.67	-	-

1/ Table 11 in the original summary.

2/ Production of refined metal from imported cobalt-containing matte.

3/ Exports are not separately reported in official U.S. statistics but are considered to be negligible.

4/ Estimated by the U.S. Bureau of Mines.

5/ Not available.

Source: Compiled from official statistics of the U.S. Department of Commerce and the U.S. Bureau of Mines.

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Table 19. 1/--Cobalt ore: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (pounds)				
Canada------	2,398	0	0	0	114
Belgium-----	0	0	29,472	13,418	0
Fr Germ-----	0	9	0	1,102	0
Mexico------	0	5,229	4,075	0	0
Zambia------	9,200	0	0	0	0
Total---	11,598	5,238	33,547	14,520	114
	Value (1,000 dollars)				
Canada------	60	-	-	-	11
Belgium-----	-	-	236	49	-
Fr Germ-----	-	2	-	25	-
Mexico------	-	49	38	-	-
Zambia------	265	-	-	-	-
Total---	325	50	274	73	11
	Unit value (per pound) 2/				
Canada------	-	-	-	-	-
Belgium-----	-	-	-	-	-
Fr Germ-----	-	-	-	-	-
Mexico------	-	-	-	-	-
Zambia------	-	-	-	-	-
Average--	27.98	9.63	8.17	5.05	97.67

1/ Table number 12 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Columbium (TSUS items 601.21-603.67)

U.S. industry

There were no known domestic producers of columbium ore or concentrates during 1980-84.

U.S. customs treatment

The rates of duty applicable to imports of columbium ore and metal-bearing materials covered by this supplement are shown in table 20. All items are eligible for duty-free treatment under the CBERA. An excerpt from the TSUSA covering columbium articles and an explanation of the various rates of duty are provided in appendix A.

Table 20.--Columbium: U.S. rates of duty, by TSUS items

(Percent ad valorem)

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.21	Columbium ore	Free	2/	2/	2/	2/	2/	2/	2/	2/	Free.
603.67	Materials which are synthetic tantalum-columbium concentrates.	Free	2/	2/	2/	2/	2/	2/	2/	2/	30%.

1/ Rate effective prior to Jan. 1, 1980.
2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Reported consumption of columbium metal-bearing materials declined from 3.1 million pounds in 1980 and stabilized at an estimated 1.9 to 2.0 million pounds during 1981-84, despite increased columbium use in stainless and heat-resisting steels and in superalloys, as consumption of high-strength low alloy (HSLA) steel suffered during this period (table 21). The United States is totally dependent on imports to meet domestic demand, with imports accounting for over 100 percent of apparent consumption during 1980-84.

U.S. production

There was no domestic mine production of columbium ores during 1980-84 (table 21). The United States had columbium resources estimated at 800 million pounds in 1984, or less than 1 percent of the world total.

Columbium concentrate is on the critical and strategic materials list and is stockpiled by the U.S. Government. The status of the stockpile, as of November 30, 1984, 1/ is as follows:

Material	Goal	Total inventory	Authorized for disposal	Sales, 11 months
	1,000 pounds, columbium content			
Columbium Concentrate	5,600	937	-	-

U.S. trade

U.S. imports.--U.S. imports of columbium metal-bearing materials declined 51 percent from 4.9 million pounds ($27.1 million) in 1980 to 2.4 million pounds ($15.0 million) in 1982 due to weakened steel demand before increasing to 4.3 million pounds ($13.6 million) in 1984 as steel demand recovered (table 22). The unit value per pound increased from $5.58 in 1980 to $11.27 in 1981 before declining to $3.14 in 1984 as prices remained weak. West Germany, Brazil, and Canada were the leading suppliers of columbium ore and concentrate during 1980-84, with imports from Brazil declining sharply from 1980 levels. Transportation costs are an insignificant cost factor in the marketing of columbium ore and concentrate. Estimated transportation costs associated with U.S. imports of the products covered averaged approximately 1 percent of the customs value during 1980-84.

U.S. exports.--Exports of columbium metal-bearing materials, which are not separately reported in official U.S. statistics, are considered to be negligible.

1/ FEMA and the U.S. Bureau of Mines.

Table 21. 1/--Columbium ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in thousands of pounds; value in thousands of dollars; unit value per pound)

Year	Production	Exports	Imports 2/	Reported consumption	Ratio (percent) of imports to consumption 3/
			Quantity		
1980	0	4/	4,863	5/ 3,122	5/ 156
1981	0	4/	4,429	1,983	223
1982	0	4/	2,354	6/ 1,900	124
1983	0	4/	2,614	6/ 1,900	138
1984	0	4/	4,323	6/ 2,000	216
			Value		
1980	7/	4/	27,116	7/	7/
1981	7/	4/	49,889	7/	7/
1982	7/	4/	15,008	7/	7/
1983	7/	4/	10,766	7/	7/
1984	7/	4/	13,582	7/	7/
			Unit value		
1980	-	-	$ 5.58	-	-
1981	-	-	11.27	-	-
1982	-	-	6.38	-	-
1983	-	-	4.12	-	-
1984	-	-	3.14	-	-

1/ Table 13 in the original summary.

2/ Includes synthetic tantalum-columbium concentrates.

3/ The ratio of imports to reported consumption exceeds 100 percent because synthetic tantalum-columbium concentrates are included in imports but excluded from reported consumption.

4/ Exports are not separately reported in official U.S. statistics but are considered to be negligible.

5/ Revised.

6/ Estimated by the U.S. Bureau of Mines.

7/ Not available.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

Table 22. 1/--Columbium ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980 2/	1981 2/	1982 2/	1983 2/	1984 2/
	Quantity (pounds)				
Fr Germ	58,004	2,424,435	1,371,754	959,942	1,034,698
Canada	1,445,618	925,643	713,920	1,296,880	2,497,599
Nigeria	996,488	752,209	230,503	164,494	495,492
Brazil	1,757,391	193,452	30,864	53,417	142,857
Austral	6,894	0	0	0	39,531
Malaysa	90,561	38,989	0	66,916	104,812
Nethlds	0	0	0	70,463	8,094
Rep Saf	2,816	0	0	1,427	0
All other	505,031	93,799	6,673	0	0
Total	4,862,803	4,428,527	2,353,714	2,613,539	4,323,083
	Value (1,000 dollars)				
Fr Germ	1,209	35,698	12,234	6,955	6,491
Canada	3,504	2,141	1,610	2,128	4,089
Nigeria	8,357	6,340	950	597	1,995
Brazil	9,311	2,912	148	440	431
Austral	179	-	-	-	388
Malaysa	1,043	453	-	162	163
Nethlds	-	-	-	431	24
Rep Saf	86	-	-	52	-
All other	3,428	2,345	66	-	-
Total	27,116	49,889	15,008	10.766	13,582
	Unit value (per pound) 3/				
Fr Germ	-	-	-	-	-
Canada	-	-	-	-	-
Nigeria	-	-	-	-	-
Brazil	-	-	-	-	-
Austral	-	-	-	-	-
Malaysa	-	-	-	-	-
Nethlds	-	-	-	-	-
Rep Saf	-	-	-	-	-
All other	-	-	-	-	-
Average	5.58	11.27	6.38	4.12	3.14

1/ Table number 14 in the original summary.

2/ Includes synthetic tantalum-columbium concentrates.

3/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Copper (TSUS items 601.66-603.55)

U.S. industry

The domestic copper mining industry has exhibited a significant decline since 1980. Between 1981 and 1984, 19 domestic copper mines have closed (including 16 of the 28 major U.S. copper mines). In 1984, 31 mines accounted for 99 percent of mine production, but by yearend, 6 of these had either closed or curtailed production. The copper industry retrenchment was concentrated regionally with Arizona experiencing a 53-percent cutback; Utah, 20 percent; Montana, 12 percent; and Michigan, 9 percent. However, the primary mining States were still Arizona, New Mexico, and Utah. Mine and mill employment rose from 27,500 persons in 1980 to 30,600 persons in 1981, before dropping to approximately 15,000 persons in 1983 and 1984, as domestic production capacity utilization declined to its current level of approximately 60 percent.

U.S. customs treatment

The rates of duty for imports of copper ores and metal-bearing materials covered by this supplement are shown in table 23. The items eligible for preferential treatment under the GSP are also shown in this table. Imports of certain copper ores and metal-bearing materials are eligible for duty-free treatment under the CBERA. The duty on copper scale is suspended temporarily until December 31, 1985, as provided in item 911.05. An excerpt from the TSUSA covering copper ores and metal-bearing materials and an explanation of the various rates of duty are provided in appendix A.

U.S. consumption

After rising to 1.4 million metric tons ($2.7 billion) in 1981 from 1.1 million metric tons ($2.5 billion) in 1980, apparent consumption of copper metal-bearing materials stabilized at 1.1 million metric tons ($1.8 billion) in 1982 and 1983 (table 24). Consumption fell to 1.0 million metric tons ($1.5 billion) in 1984. The consumption rise in 1981 represented a return to pre-1980 levels, when a 5-month domestic labor strike immobilized 10 major U.S. copper-producing companies and numerous other U.S. copper consumers. The consumption decline during 1982-84 resulted from the economic recession's adverse affect on the copper metal market. In these years, several smelters closed and refineries operated at reduced rates, consuming less copper metal-bearing materials as feed in their production. Engineering changes, such as miniaturization of products and materials substitution, reduced copper consumption. The electronics and automotive industries required thinner gauges, narrower widths, and smaller quantities of copper. Also, copper was vulnerable to substitution by polyvinyl chloride for use in plumbing pipe and tubing, aluminum for automotive radiators and electrical cable, and optical fibers for telephone lines. The portion of U.S. consumption supplied by imports fluctuated between a low of 1 percent in 1984 and a peak of 11 percent in 1982.

Table 23.—Copper: U.S. rates of duty, by TSUS items

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1—								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.66	Ores containing more than 2 percent by weight of any one or more of the metals lead, zinc, or copper, as determined by chemical analysis without deductions, to be initially treated at a lead, zinc, copper, or other plant (copper content).	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
	All copper-bearing ores:										
602.25	For an aggregate amount not to exceed 15,000 tons of copper content in ores which contain by weight not over 15 percent copper and which are entered in any calendar year for use as a flux or sulphur reagent in copper smelting or converting.	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
	Other:										
602.28A	When, under the procedures set forth in headnote 5 of part 2C of this schedule, the market price of copper is considered to be below 24 cents per pound.	1¢/lb. on copper content.	0.9¢/lb. on copper content.	0.9¢/ lb. on copper content.	0.9¢/ lb. on copper content.	0.9¢/ lb. on copper content	0.8¢/ lb. on copper content	0.8¢/ lb. on copper content	0.8¢/ lb. on copper content.	0.8¢/ lb. on copper content	4¢/lb. on copper content.
602.29	If products of Cuba	Free 4/									
602.30	Other copper from ore to be initially treated at a lead, zinc, copper, or other plant.	0.8¢/lb.	Free	3/	3/	3/	3/	3/	3/	3/	4¢/lb. on cop- content.

See footnotes at end of table.

Table 23—Copper: U.S. rates of duty, by TSUS items—Continued

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rates of duty effective with respect to articles entered on or after Jan. 1— 3/								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
	Materials, other than the foregoing, containing, by weight, over 10 percent of any one of the metals copper, lead, or zinc, and to be initially treated at a copper, lead, or zinc plant:										
603.49A	When, under the procedures set forth in headnote 5 of part 2C of this schedule, the market price of copper is considered to be below 24 cents per pound.	1¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.96¢/lb. on copper content + 0.72¢/lb. on lead content + 0.65¢/lb. on zinc content.	0.92¢/lb. on copper content + 0.69¢/lb. on lead content + 0.63¢/lb. on zinc content.	0.89¢/lb. on copper content + 0.66¢/lb. on lead content + 0.61¢/lb. on zinc content.	0.85¢/lb. on copper content + 0.62¢/lb. on lead content + 0.58¢/lb. on zinc content.	0.81¢/lb. on copper content + 0.59¢/lb. on lead content + 0.56¢/lb. on zinc content.	0.77¢/lb. on copper content + 0.56¢/lb. on lead content + 0.54¢/lb. on zinc content.	0.74¢/lb. on copper content + 0.53¢/lb. on lead content + 0.52¢/lb. on zinc content.	0.70¢/lb. on copper content + 0.5¢/lb. on lead content + 0.5¢/lb. on zinc content.	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.
603.50A	Other (copper content)————	0.8¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.74¢/lb. on copper content + 0.69¢/lb. on lead content + 0.62¢/lb. on zinc content.	0.68¢/lb. on copper content + 0.64¢/lb. on lead content + 0.58¢/lb. on zinc content.	0.62¢/lb. on copper content + 0.58¢/lb. on lead content + 0.53¢ lb. on zinc content.	0.56¢/lb. on copper content + 0.52¢/lb. on lead content + 0.48¢ lb. on zinc content.	0.5¢/lb. on copper content + 0.47¢/lb. on lead content + 0.44¢ lb. on zinc content.	0.44¢/lb. on copper content + 0.41¢/lb. on lead content + 0.39¢ lb. on zinc content.	0.38¢/lb. on copper content + 0.36¢/lb. on lead content + 0.35¢ lb. on zinc content.	0.32¢/lb. on copper content + 0.3¢/lb. on lead content + 0.3¢ lb. on zinc content.	4¢/lb. on copper content + 1.5/lb. on lead content + 1.67¢/lb. on zinc content.

See footnotes at end of table.

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Table 23.—Copper: U.S. rates of duty, by TSUS items—Continued

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rates of duty effective with respect to articles entered on or after Jan. 1— 3/								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
	Materials, other than the foregoing, containing, by weight, over 5 troy ounces of gold per short ton, or over 100 troy ounces of precious metals per short ton:										
603.54A	When, under the procedures set forth in headnote 5 of part 2C of this schedule, the market price of copper is considered to be below 24 cents per pound.	1¢/lb. on copper content + 0.75¢/ lb. on lead content + 0.67¢/ lb. on zinc content.	0.95¢/ lb. on copper content + 0.71¢/ lb. on lead content + 0.64¢ lb. on zinc content.	0.9¢/ lb. on copper content + 0.66¢/ lb. on lead content + 0.6¢/ lb. on zinc content.	0.85¢/ lb. on copper content + 0.62¢/ lb. on lead content + 0.57¢/ lb. on zinc content.	0.8¢/ lb. on copper content + 0.57¢/ lb. on lead content + 0.53¢/ lb. on zinc content.	0.75¢/ lb. on copper content + 0.53¢/ lb. on lead content + 0.5¢/ lb. on zinc content.	0.7¢/ lb. on copper content + 0.49¢/ lb. on lead content + 0.48¢/ lb. on zinc content.	0.65¢/ lb. on copper content + 0.44¢/ lb. on lead content + 0.43¢/ lb. on zinc content.	0.6¢/ lb. on copper content + 0.4¢/ lb. on lead content + 0.4¢/ lb. on zinc content.	4¢/lb. on copper content + 1.5¢/ lb. on lead content + 1.67¢/ lb. on zinc content.
603.55A	Other (copper content)---	0.8¢/lb. on copper content + 0.75¢/ lb. on lead content + 0.67¢/lb. on zinc content.	0.7¢/lb. on copper content + 0.66¢/lb. on lead content + 0.59¢/lb. on zinc content.	0.6¢/ lb. on copper content + 0.56¢/ on lead content +0.5¢/ lb. on zinc content.	0.5¢/ lb. on copper content + 0.47¢/ lb on lead content + 0.42¢/ lb. on zinc content.	0.4¢/ lb. on copper content + 0.37¢/ lb. on lead content + 0.33¢/ lb. on zinc content.	0.3¢/ lb. on copper content + 0.28¢/ lb. on lead content + 0.25¢/ lb. on zinc content.	0.2¢/ lb. on copper content + 0.19¢/ lb. on lead content + 0.17¢/ lb. on zinc content.	0.1¢/ lb. on copper content + 0.09¢/ lb. on lead content + 0.08¢/ lb. on zinc content.	Free	4¢/lb on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.

1/ The designation "A" or "A*" indicates that the item is currently designated as an eligible article for duty-free treatment under the U.S. GSP. "A" indicates that all beneficiary developing countries are eligible for the GSP. "A*" indicates that certain of these countries, specified in general headnote 3(c) of the *Tariff Schedules of the United States Annotated*, are not eligible.

2/ Rate effective prior to Jan. 1, 1980.

3/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

4/ Presidential Proclamation No. 3447, dated Feb. 3, 1962, prohibits the importation into the United States of all goods of Cuban origin and all goods imported from or through Cuba, subject to exceptions determined by the Secretary of the Treasury.

U.S. production

Mine production rose 25 percent from 1.2 million metric tons ($2.7 billion) in 1980 to 1.5 million metric tons ($2.9 billion) in 1981, before declining to 1.0 million metric tons ($1.8 billion) in 1983 (table 24). Production rose to 1.1 million metric tons ($1.6 billion) in 1984. U.S. mine production in 1981 reached its highest level in 8 years, despite plant closings at several large mines in the last 2 weeks of the year, as production at primary smelters from ores and refinery production derived from ores both increased in 1981. Faced with low prices, high interest rates, and reduced access to capital for expansion or modernization of facilities, many copper mining firms retrenched during 1981-84. The level of imports unwrought copper and the share of imports to consumption of unwrought and wrought copper increased during 1980-84. When imports of copper and copper products displace domestic production, the result is reduced demand for copper ores, concentrates and metal-bearing materials used in the production of copper. This lower level of demand, therefore, contributed to a lower level of domestic production of ores and concentrates.

The United States has copper resources that are currently estimated at 90 million metric tons, or 17.6 percent of the world's copper resources. The United States accounted for 12.9 percent of the world's mine production of copper in 1984.

U.S. trade

U.S. imports.--After declining from 52,000 metric tons ($73.4 million) in 1980 to 42,000 metric tons ($59.8 million) in 1981, U.S. imports of copper metal-bearing materials rose to 121,000 metric tons ($145.1 million) in 1982. These imports then fell 89 percent over the next 2 years to 13,000 metric tons ($12.5 million) in 1984 (table 25), largely reflecting production cutbacks of unwrought copper by domestic producers and a greater demand for unwrought copper imports. A portion of these imports were sourced from foreign copper properties in which U.S. producers had an interest. However, the substantial increase in imports in 1982 principally reflected Government actions to maintain or expand copper production in spite of falling prices and weak demand in certain countries dependent on this production for employment and foreign exchange earned by copper exports. Domestic smelters, faced with a loss of domestic concentrates, increasingly relied on purchases of foreign material at reduced prices as feedstock for their operations. The principal supplying countries during 1980-84 were Canada, Mexico, and the Philippines. There were no imports of copper ore and metal-bearing materials under the CBERA in 1984.

Imports of copper metal-bearing materials under the GSP roughly tripled from 1,155 metric tons ($1.8 million) in 1980 to a peak of 3,450 metric tons ($2.9 million) in 1982, before declining 99 percent (primarily during 1983-84) to 47 metric tons ($95,000) in 1984. The principal GSP-supplying countries during 1980-84 were Chile and Peru.

Transportation costs are not a significant factor in the trade of these materials, accounting for about 3 percent of the customs value of copper ores and concentrates.

U.S. exports.--Exports of copper metal-bearing materials rose 74 percent during 1980-82, increasing from 113,000 metric tons ($218.8 million) in 1980 to 197,000 metric tons ($221.6 million) in 1982. U.S. exports fell to 49,000 metric tons ($59.7 million) in 1983, before rising to 66,000 metric tons ($81.0 million) in 1984 (table 26). U.S. exports as a percentage of production declined from 9.6 percent in 1980 to 6.1 percent in 1984. This ratio peaked at 17.3 percent in 1982. U.S. export trends for copper metal-bearing materials during 1980-84 were largely controlled by demand shifts in the Japanese market, the dominant market factor affecting world export trade in copper ores and concentrates. Japan was the major U.S. export market during 1980-84. With its substantial smelting and refining capacity and low mine production, Japan has become the principal world importer of copper ores and concentrates. Japan maintains a strong position in purchasing foreign ores and concentrates, even in the U.S. market, which can create supply dislocations for concentrates by domestic copper smelters. This is partly due to the high import tariff rates on refined copper products in Japan (enabling higher Japanese prices for the refined product), which allows Japan's refiners to bid higher for copper ore and concentrates. Another reason is the purchasing leverage of Japan's trading companies and their ability to secure long-term contracts.

The competitive position of domestic mines is affected by marginally profitable ores, high environmental costs, slow growth in demand, and strong foreign competition. Pollution control costs are much higher for the U.S. copper industry than for the copper industries of other copper mining countries and have diverted capital from other projects. Since the average grade of U.S. copper ore is 35 percent below the average grade in foreign countries, for each ton of copper produced, U.S. mines must mill and concentrate one and a half times as much ore as their foreign competitors. The result of these conditions is that higher-cost U.S. producers must compete with lower-cost foreign producers, both in their home market and abroad, at a time when recovery from the economic recession in the United States and other industralized countries has increased demand for copper, but low copper prices and higher levels of copper imports have adversely affected the domestic industry.

As a result of these competitive conditions, the United States experienced a significant trade balance shift in these products in 1983, beginning with a trade surplus in copper ores and metal-bearing materials during 1980-82 and reaching a high of $155.0 million in 1981. In 1983, the trade balance reversed to a deficit of $26.3 million before increasing to a $68.5 million trade surplus in 1984, largely reflecting demand shifts in the Japanese market and reduced need for foreign feedstock in curtailed domestic operations.

Table 24. 1/--Copper ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in thousands of metric tons, copper content; value in thousands of dollars; unit value per metric ton, copper content)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	2/ 1,181	113	52	2/ 1,120	2/ 5
1981	1,538	156	42	1,424	3
1982	1,140	197	121	1,064	11
1983	1,038	49	93	1,082	9
1984	3/ 1,087	66	13	1,034	1
			Value		
1980	2/ 2,666,931	218,849	73,355	2/2,521,437	3
1981	2,886,440	214,785	59,780	2,731,435	2
1982	1,840,856	221,582	145,098	1,764,372	8
1983	1,751,476	59,677	86,013	1,777,812	5
1984	3/ 1,602,204	80,997	12,450	1,533,657	1
			Unit value		
1980	$2,258.20	$1,940.06	$1,401.64	-	-
1981	1,876.75	1,378.42	1,439.83	-	-
1982	1,614.79	1,127.18	1,197.82	-	-
1983	1,687.36	1,210.97	923.48	-	-
1984	1,473.97	1,234.23	954.31	-	-

1/ Table 15 in the original summary.
2/ Revised.
3/ Estimated by the U.S. Bureau of Mines.

Source: Compiled from official statistics of the U.S. Department of Commerce and the U.S. Bureau of Mines.

Table 25. 1/--Copper ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
			Quantity (metric tons)		
Phil R	8,615	20,242	26,837	11,259	5,681
Canada	40,118	4,281	23,478	37,292	2,599
Chile	93	985	4,880	6,836	2,338
Peru	2,126	3,813	8,901	3,844	963
Austral	1,361	974	3,651	949	851
Mexico	22	11,170	52,035	30,917	225
Hondura	0	0	0	1,990	174
Japan	0	0	976	10	196
All other	0	54	377	43	19
Total	52,335	41,519	121,135	93,140	13,046
			Value (1,000 dollars)		
Phil R	18,838	32,393	41,465	16,266	5,851
Canada	48,790	5,814	29,855	35,963	2,622
Chile	288	1,479	4,280	8,296	1,841
Peru	3,053	4,552	13,990	2,061	927
Austral	2,362	1,026	3,727	619	485
Mexico	23	14,497	48,913	22,144	359
Hondura	-	-	-	584	209
Japan	-	-	1,915	10	127
All other	1	20	955	69	29
Total	73,355	59,780	145,098	86,013	12,450
			Unit value (per metric ton) 2/		
Phil R	-	-	-	-	-
Canada	-	-	-	-	-
Chile	-	-	-	-	-
Peru	-	-	-	-	-
Austral	-	-	-	-	-
Mexico	-	-	-	-	-
Hondura	-	-	-	-	-
Japan	-	-	-	-	-
All other	-	-	-	-	-
Average	1,401.64	1,439.83	1,197.82	923.48	954.31

1/ Table number 17 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 26. 1/--Copper ore and metal bearing material: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (metric tons)				
Japan	79,155	116,021	147,176	29,200	55,930
Fr Germ	2,873	241	16,596	7,135	1,871
Belgium	3,133	1,171	200	517	2,574
Kor Rep	7,338	0	1,546	0	2,877
Canada	3,007	6,070	1,423	4,510	1,136
U King	717	1,413	957	593	426
India	96	275	822	955	488
Ecuador	0	0	0	89	9
All other	16,486	30,629	27,860	6,281	314
Total	112,805	155,820	196,580	49,280	65,625
	Value (1,000 dollars)				
Japan	150,553	161,287	157,704	33,060	64,239
Fr Germ	6,287	590	16,888	10,197	4,234
Belgium	8,545	3,263	2,519	2,792	4,182
Kor Rep	15,378	-	1,932	-	4,090
Canada	2,163	5,141	2,569	3,208	2,614
U King	863	958	3,062	1,505	654
India	173	388	989	1,276	609
Ecuador	-	-	-	168	130
All other	34,888	43,157	35,917	7,471	244
Total	218,849	214,785	221,582	59,677	80,997
	Unit value (per metric ton) 2/				
Japan	-	-	-	-	-
Fr Germ	-	-	-	-	-
Belgium	-	-	-	-	-
Kor Rep	-	-	-	-	-
Canada	-	-	-	-	-
U King	-	-	-	-	-
India	-	-	-	-	-
Ecuador	-	-	-	-	-
All other	-	-	-	-	-
Average	1,940.06	1,378.42	1,127.18	1,210.97	1,234.23

1/ Table number 16 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Iron Ore (TSUS items 601.24-603.15)

U.S. producers

In 1984, 17 companies, most of them located in Minnesota and Michigan, operated 21 mines, 17 concentration plants, and 11 pelletizing plants, compared with 28 companies operating 47 mines, 36 concentration plants, and 217 pelletizing plants in 1980. Capacity utilization in the industry fell to 64 percent in 1984 from 75 percent in 1980, and employment decreased 44 percent to 9,600 workers in 1984 from an average of 17,000 in 1980, reflecting permanent mine closings and reduced production due to the declining long-term demand for steel, the principal user of iron ore.

U.S. customs treatment

The rates of duty applicable to iron ore appear in table 27. The items eligible for preferential treatment under the GSP are also shown in this table. An excerpt from the TSUSA covering iron ore and an explanation of the various rates of duty are provided in appendix A. All items are eligible products from countries designated as beneficiary countries for purposes of the CBERA.

Table 27.--Iron ore: U.S. rates of duty, by TSUS items

(Cents per long ton)

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.24	Iron ore----------------------------	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
603.15A	Ferrous scale----------------------	37¢	36¢	35¢	34¢	33¢	33¢	32¢	31¢	30¢	75¢.

1/ The designation "A" indicates that the item is currently designated as an eligible article for duty-free treatment under the GSP and that all beneficiary developing countries are eligible for the GSP.

2/ Rate effective prior to Jan. 1, 1980.

3/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Reported domestic consumption of iron ore increased from 98.9 million long tons ($3.1 billion) in 1980 to 104.4 million long tons ($3.6 billion) in 1981 as a result of increased short-term demand for use in steelmaking (table 28). Domestic consumption then fell 39 percent to 63.9 million long tons ($1.8 billion) in 1982 as a result of continuing depressed demand in the steel industry and the reduction of inventories. During 1983 and 1984, consumption increased gradually to 75.0 million long tons ($3.1 billion) in 1984 due to increased demand by the steel industry. Imports averaged 25 percent of consumption during 1980-84 (table 28).

U.S. production

Domestic production of iron ore increased from 69.6 million long tons ($2.5 billion) in 1980 to 73.2 million long tons ($3.0 billion) in 1981, and then declined to 35.4 million long tons ($1.5 billion) in 1982 table 28) because of the decreased demand for blast furnace-produced iron. The increased use of electric furnaces, which primarily use waste and scrap as opposed to iron ore has resulted in a decrease in the demand for iron ore in recent years. Also there is a relationship between the high level of steel imports and lower iron ore production. Production did increase somewhat in 1983 and reached 49.8 million long tons ($2.2 billion) in 1984, as steel production increased during the economic recovery period. However, the U.S. share of world iron ore production fell to 7 percent in 1984 as compared to 8.3 percent in 1980 (see app. B).

U.S. trade

U.S. imports.--U.S. imports of iron ore increased from 25.1 million long tons ($772.9 million) in 1980 to 28.3 million long tons ($948.3 million) in 1981, and then declined due to the decline in demand for steel to 13.5 million long tons ($455.3 million) in 1983. In 1984, imports increased simultaneously with an over 10-percent increase in raw steel production to 17.3 million long tons ($537.6 million) (table 29). During 1980-84 the principal foreign sources (all having substantial quantity and high quality iron ore resources) of iron ore were Canada (accounting for 65 percent of imports in 1984), Brazil (15 percent), Liberia (10 percent), and Venezuela (9 percent). Transportation costs of iron ore vary between 20 and 45 percent of the delivered price (the major iron ore using areas of the United States) are the lower Great Lakes, Pittsburgh, Baltimore, and the lower Ohio Valley), depending on the distance and the number of loadings and unloadings. Transportation is a critical factor in the purchase of iron ore since in many instances it determines the geographic limit of sale between domestic and imported iron ore. No products were imported during 1984 from countries designated as beneficiary countries for purposes of the CBERA, and no items were eligible for preferential treatment under the GSP.

U.S. exports.--U.S. exports of iron ore decreased due to a worldwide lack of demand for iron ore from 5.7 million long tons ($230.6 million) in 1980 to 3.1 million long tons ($150.5 million) in 1982, before increasing 61 percent to nearly 5.0 million long tons ($239.3 million) in 1984 (table 30). The principal export market was Canada, which accounted for virtually all U.S. exports. Exports between 1980 and 1984 accounted for approximately 8 to 11 percent of production. The trade deficit in iron ore between 1980 and 1984 averaged approximately $430 million per year, declining to $300 million in 1984.

Table 28. 1/--Iron ore and other metal-bearing material: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in thousands of long tons; value in thousands of dollars; unit value per long ton)

Year	Production 2/	Exports	Imports	Reported consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	3/ 69,613	5,689	25,058	98,879	25
1981	73,174	5,546	28,335	104,385	27
1982	35,433	3,178	14,717	63,916	23
1983	35,594	3,781	13,488	70,600	19
1984	49,780	4,993	17,335	75,000	23
			Value		
1980	3/ 2,545,051	230,568	772,850	3,086,403	25
1981	2,955,498	244,685	948,323	3,618,877	26
1982	1,478,619	150,522	496,895	1,838,182	27
1983	1,556,526	182,744	455,313	2,883,304	16
1984	2,189,822	239,257	537,642	3,063,000	18
			Unit value		
1980	$36.56	$40.53	$30.84	-	-
1981	40.39	44.13	33.47	-	-
1982	41.73	47.37	33.76	-	-
1983	43,73	48.33	33.76	-	-
1984	43.99	47.92	31.01		

1/ Table No. 18 in the original summary.

2/ Excludes ores containing 5 percent or more manganese, which are negligible.

3/ Revised.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

Table 29 1/—Iron ore and metal bearing materials: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (long tons)				
Canada	17,311,304	18,345,322	9,293,319	8,991,110	11,334,564
Brazil	1,995,441	1,743,931	972,273	1,275,995	2,541,683
Venez	3,602,444	5,370,537	1,819,443	1,414,340	1,587,790
Liberia	1,590,134	2,159,582	2,399,244	1,732,041	1,744,733
Sweden	32,910	86,675	71,382	68,149	84,187
Spain	0	0	0	4,958	34,082
Fr Germ	30	570	697	629	1,509
Peru	192,511	77,652	34,899	461	6,613
All other	333,456	350,592	136,150	66	61
Total	25,059,230	28,334,831	14,717,397	13,487,749	17,335,212
	Value (1,000 dollars)				
Canada	581,759	707,975	360,393	342,377	417,223
Brazil	62,889	52,404	26,339	30,192	56,016
Venez	80,981	140,931	61,202	49,450	36,393
Liberia	27,612	35,505	43,036	31,487	25,270
Sweden	917	2,320	2,176	1,540	1,659
Spain	-	-	-	98	827
Fr Germ	7	183	172	161	169
Peru	5,678	2,402	1,058	5	76
All other	12,006	6,503	2,329	4	10
Total	772,850	948,323	496,895	455,313	537,642
	Unit value (per long ton) 2/				
Canada					
Brazil					
Venez					
Liberia					
Sweden					
Spain					
Fr Germ					
Peru					
All other					
Average	30.84	33.47	33.76	33.75	31.01

1/ Table number 20 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping or ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 30 1/—Iron ore and metal bearing materials: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (long tons)				
Canada	5,651,841	5,528,395	3,173,354	3,779,614	4,987,572
Nethlds	0	0	0	0	3,445
U King	121	442	275	105	300
Mexico	24,882	11,306	987	99	539
Colomb	180	150	61	89	243
Venez	643	580	491	65	40
Japan	9	50	0	0	94
Singapr	0	0	0	0	174
All other	11,522	4,311	2,452	1,272	344
Total	5,699,198	5,545,524	3,177,620	3,791,244	4,992,751
	Value (1,000 dollars)				
Canada	228,868	243,527	150,200	182,490	238,856
Nethlds	-	-	-	-	263
U King	10	21	21	5	32
Mexico	1,212	720	67	4	24
Colomb	8	8	9	14	20
Venez	70	66	67	10	15
Japan	6	2	-	-	8
Singapr	-	-	-	-	8
All other	394	341	159	222	32
Total	230,568	244,685	150,522	182,744	239,257
	Unit value (per long ton) 2/				
Canada					
Nethlds					
U King					
Mexico					
Colomb					
Venez					
Japan					
Singapr					
All other					
Average	40.53	44.13	47.37	48.33	47.92

1/ Table number 19 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled form official statistics of the U.S. Department of Commerce.

52.

Lead (TSUS Items 601.66-603.55)

U.S. industry

Five firms continued to produce about two-thirds of total U.S. lead production during 1980-84. Seven mines in Missouri yielded 87 percent of the total domestic production in 1984, eight lead mines accounted for 91 percent in 1983, and 88 percent in 1981. During 1982, the 9th and 11th largest lead mines, along with several smaller mines, were closed indefinitely, but the lost production due to these closings was more than offset by the increased production by mines in Missouri. In March 1983, the second largest domestic lead mine was shut down. These mines were closed due to weak demand and low metal prices. According to the Bureau of Mines, competition from foreign ores and metals in the domestic market and production from lower cost Missouri mines reduced the ability of the high-cost western mines to maintain production and necessary resource development. In 1984, the two largest lead producers, which are the only fully integrated producers, suffered strikes throughout most of the year. Six Missouri mines were affected. The United States has lead resources that are currently estimated at 25 million metric tons, or 17 percent of the world's lead resources. 1/ The industry employed 2,200 persons in 1984, down from 4,400 persons in 1980.

U.S. customs treatment

The rates of duty applicable to imports of lead ores and metal-bearing materials covered by this supplement appear in table 31. The items eligible for preferential treatment under the GSP are also shown in this table. In 1983, Chile lost GSP eligibility for TSUS item 603.50, while Honduras lost GSP eligibility for TSUS item 602.10. In 1984, both countries regained GSP eligibility for their respective items, and Peru lost GSP eligibility for TSUS item 602.10. All items are eligible for duty-free treatment under the CBERA. An excerpt from the TSUSA covering ores and metal-bearing materials and an explanation of the various rates of duty are provided in app. A.

U.S. consumption

Apparent consumption of lead ore and metal-bearing materials declined from 515,875 metric tons of contained lead ($479.6 million) in 1980, to 424,687 metric tons (348.9 million) in 1981, increased to 482,124 metric tons ($278.1 million) in 1982 and then decreased to 332,138 metric tons ($201.8 million) in 1984 (table 32). Consumption decreased due to lower demand for all types of lead-acid storage batteries, lower use of lead in gasoline, and a general decline in demand for lead metal products. In 1982, there was a slight increase in demand for replacement automotive batteries. Imports accounted for 9.6 percent of domestic consumption in 1984, up from 5.9 percent in 1980 and 6.5 percent in 1981.

1/ U.S. Bureau of Mines, Lead-Mineral Commodity Profile 1983.

Table 31.—Lead: U.S. rates of duty, by TSUS items

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1— 3/								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.66	Ores containing more than 2 percent by weight of any one or more of the metals lead, zinc, or copper, as determined by chemical analysis without deductions, to be initially treated at a lead, zinc, copper, or other plant (lead content).	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
602.10A*	All lead-bearing ores————	0.75¢/lb on lead content.	0.75¢/lb on lead content.	0.75¢/lb. on lead content.	0.75¢/lb. on lead content.	0.75¢/lb. on lead content.	0.75¢/lb. on lead content.	0.75¢/lb. on lead content.	0.75¢/lb. on lead content.	0.75¢/lb. on lead content.	1.5¢/lb. on lead content.
603.25A	Lead dross————	1.0625¢/lb. on lead content.	1.04¢/lb. on lead content.	1.02¢/lb. on lead content.	1.00¢/lb. on lead content.	0.98¢/lb. on lead content.	0.96¢/lb. on lead content.	0.94¢/lb. on lead content.	0.92¢/lb. on lead content.	0.90¢/lb. on lead content.	2.125¢/lb. on lead content.
	Materials, other than the foregoing, containing, by weight, over 10 percent of any one of the metals copper, lead, or zinc, and to be initially treated at a copper, lead, or zinc plant:										
603.49A	When, under the procedures set forth in headnote 5 of part 2C of this schedule, the market price of copper is considered to be below 24 cents per pound.	1¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.96¢/lb. on copper content + 0.72¢/lb. on lead content + 0.65¢/lb. on zinc content.	0.92¢/lb. on copper content + 0.69¢/lb. on lead content + 0.63¢/lb. on zinc content.	0.89¢/lb. on copper content + 0.66¢/lb. on lead content + 0.61¢/lb. on zinc content.	0.85¢/lb. on copper content + 0.62¢/lb. on lead content + 0.58¢/lb. on zinc content.	0.81¢/lb. on copper content + 0.59¢/lb. on lead content + 0.56¢/lb. on zinc content.	0.77¢/lb. on copper content + 0.56¢/lb. on lead content + 0.54¢/lb. on zinc content.	0.74¢/lb. on copper content + 0.53¢/lb. on lead content + 0.52¢/lb. on zinc content.	0.7¢/lb. on copper content + 0.5¢/lb. on lead content + 0.5¢/lb. on zinc content.	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.

See footnotes at end of table.

54.

Table 31.--Lead: U.S. rates of duty, by TSUS items--Continued

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1-- 3/								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
603.50A	Other (lead content)----------	0.8¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.74¢/lb. on copper content + 0.69¢/lb. on lead content + 0.62¢/lb. on zinc content.	0.68¢/lb. on copper content + 0.64¢/lb. on lead content + 0.58¢/lb. on zinc content.	0.62¢/lb. on copper content + 0.58¢/lb. on lead content + 0.53¢/lb. on zinc content.	0.56¢/lb. on copper content + 0.52¢/lb. on lead content + 0.48¢/lb. on zinc content.	0.5¢/lb. on copper content + 0.47¢/lb. on lead content + 0.44¢/lb. on zinc content.	0.44¢/lb. on copper content + 0.41¢/lb. on lead content + 0.39¢/lb. on zinc content.	0.38¢/lb. on copper content + 0.36¢/lb. on lead content + 0.35¢/lb. on zinc content.	0.32¢/lb. on copper content + 0.3¢/lb. on lead content + 0.3¢/lb. on zinc content.	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.
	Materials, other than the foregoing, containing, by weight, over 5 troy ounces of gold per short ton, or over 100 troy ounces of precious metals per short ton:										
603.54A	When, under the procedures set forth in headnote 5 of part 2C of this schedule, the market price of copper is considered to be below 24 cents per pound.	1¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.95¢/lb. on copper content + 0.71¢/lb. on lead content + 0.64¢/lb. on zinc content.	0.9¢/lb. on copper content + 0.66¢/lb. on lead content + 0.6¢/lb. on zinc content.	0.85¢/lb. on copper content + 0.62¢/lb. on lead content + 0.57¢/lb. on zinc content.	0.8¢/lb. on copper content + 0.57¢/lb. on lead content + 0.53¢/lb. on zinc content.	0.75¢/lb. on copper content + 0.53¢/lb. on lead content + 0.5¢/lb. on zinc content.	0.7¢/lb. on copper content + 0.49¢/lb. on lead content + 0.48¢/lb. on zinc content.	0.65¢/lb. on copper content + 0.44¢/lb. on lead content + 0.43¢/lb. on zinc content.	0.6¢/lb. on copper content + 0.4¢/lb. on lead content + 0.4¢/lb. on zinc content.	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.
603.55A	Other (lead content)----------	0.8¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.7¢/lb. on copper content + 0.66¢/lb. on lead content + 0.59¢/lb. on zinc content.	0.6¢/lb. on copper content + 0.56¢/lb. on lead content + 0.5¢/lb. on zinc content.	0.5¢/lb. on copper content + 0.47¢/lb. on lead content + 0.42¢/lb. on zinc content.	0.4¢/lb. on copper content + 0.37¢/lb. on lead content + 0.33¢/lb. on zinc content.	0.3¢/lb. on copper content + 0.28¢/lb. on lead content + 0.25¢/lb. on zinc content.	0.2¢/lb. on copper content + 0.19¢/lb. on lead content + 0.17¢/lb. on zinc content.	0.1¢/lb. on copper content + 0.09¢/lb. on lead content + 0.08¢/lb. on zinc content.	Free	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.

1/ The designation "A" indicates that the item is currently designated as an eligible article for duty-free treatment under the U.S. GSP. "A" indicates that all beneficiary developing countries are eligible for the GSP.

2/ Rate effective prior to Jan. 1, 1980.

3/ Rate not modified in the Tokyo round of the Multilatural Trade Negotiations.

U.S. production

Domestic production of lead ore and metal-bearing materials decreased from 550,366 metric tons, contained lead ($515.2 million) in 1980, to 445,535 metric tons ($358.8 million) in 1981, increased to 512,516 metric tons ($288.6 million) in 1982, and then decreased to 321,158 metric tons ($199.4 million) in 1984. Domestic mine production decreased 19 percent in 1981 and 28 percent in 1984 as a result of strikes at several major producing lead mines in Missouri. U.S. production was at low levels during the period, due to several mine closures which reflected the general worldwide recession. The United States was responsible for about 13.6 percent of the world's lead mine production in 1983.

U.S. trade

Imports.--Imports of lead ore and metal-bearing materials decreased from 30,225 metric tons ($24.7 million) in 1980, to 27,716 metric tons ($20.9 million) in 1981 and continued to decrease to 19,516 metric tons ($9.1 million) in 1982 before increasing to 31,788 metric tons ($12.5 million) in 1984 (table 33). The principal supplying countries in 1984 were Peru, Honduras, and Canada. These countries are traditional suppliers, and producers have negotiated long-term contracts for feed material. Imports decreased in 1982 and 1983 as demand weakened, and increased in 1984 as several mines experienced strikes, resulting in reduced production. Almost 74 percent of the imports in 1984 were entered under the GSP.

The aggregate cost of shipping lead in concentrates from mine or port of entry to points of consumption ranges from 1.25 to 5 cents per pound. The actual cost reflects the quality of material, method of transportation, size of shipment, and the availability of carriers. Transportation is not a major problem at vertically integrated mines through the concentrate stage. At small mines, ore haulage to distant custom mills is a significant component of cost. Transportation is also an important factor at some western mines in the movement of concentrates to distant smelters. Most of the U.S. imports of lead ore and concentrates move from coastal or railroad ports of entry to domestic smelters located mainly in the Central and Western States. This transportation cost is a major cost factor for custom smelters that compete for purchases of foreign concentrates.

Exports.--Exports of lead ore and metal-bearing materials decreased from 64,716 metric tons ($60.3 million) in 1980 to 48,564 metric tons ($30.8 million) in 1981, increased to 49,908 metric tons ($19.6 million) in 1982, and then decreased to 20,808 metric tons ($10.1 million) in 1984 (see table 34). Most lead exports were sent to Canada, where ore was refined and exported back to the United States following the 1981 closure of a major smelter in Idaho. Other principal markets in 1984 included the United Kingdom, Brazil, and Belgium. Exports decreased in 1983 and 1984 due to reduced worldwide demand for lead and low U.S. production levels. The United States moved from a position of a trade surplus of 34,491 metric tons ($35.6 million) in 1980 to a trade deficit of 10,980 metric tons ($2.3 million) in 1984.

Table 32. [1]--Lead ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in metric tons, contained lead; value in thousands of dollars; unit value per metric ton, contained weight

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	[2] 550,366	64,716	30,225	515,875	5.9
1981	445,535	48,564	27,716	424,687	6.5
1982	512,516	49,908	19,516	482,124	4.1
1983	449,038	23,832	21,165	446,371	4.8
1984	321,158	20,808	31,788	332,138	9.6
			Value		
1980	515,189	60,267	24,688	479,610	5.1
1981	358,821	30,819	20,917	348,919	6.0
1982	288,579	19,585	9,089	278,083	3.3
1983	214,623	10,583	6,173	210,213	2.9
1984	199,410	10,112	12,457	201,755	6.2
			Unit value		
1980	-	$931.25	$816.82	-	-
1981	-	634.61	754.70	-	-
1982	-	392.43	465.73	-	-
1983	-	444.08	291.66	-	-
1984		485.99	391.89		

[1] Table 21 in the original summary.

[2] Revised.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

Table 33. 1/--Lead ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
			Quantity (metric tons)		
Peru	17,997	5,863	10,051	17,601	19,539
Hondura	3,942	11,526	8,608	1,510	4,088
Mexico	775	953	0	101	3,878
Canada	3,446	2,546	326	1,939	2,708
Italy	0	0	0	0	1,557
Austral	712	643	424	6	13
Belgium	0	0	0	2	5
Finland	0	0	0	6	0
All other	3,353	6,185	107	0	0
Total	30,225	27,716	19,516	21,165	31,788
			Value (1,000 dollars)		
Peru	13,293	3,431	3,890	4,924	7,226
Hondura	3,943	9,271	4,850	673	2,201
Mexico	665	872	1	26	1,717
Canada	3,411	2,037	183	482	828
Italy	-	-	-	-	467
Austral	540	457	132	6	17
Belgium	-	-	-	1	2
Finland	-	-	-	60	-
All other	2,838	4,849	33	-	-
Total	24,688	20,917	9,089	6,173	12,457
			Unit value (per metric ton) 2/		
Peru	-	-	-	-	-
Hondura	-	-	-	-	-
Mexico	-	-	-	-	-
Canada	-	-	-	-	-
Italy	-	-	-	-	-
Austral	-	-	-	-	-
Belgium	-	-	-	-	-
Finland	-	-	-	-	-
All other	-	-	-	-	-
Average	816.82	754.70	465.73	291.66	391.89

1/ Table number 21 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 34. 1/--Lead ore and metal bearing material: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (metric tons)				
Canada	24,940	15,398	17,372	17,002	11,855
U King	2,088	1,395	273	644	1,323
Brazil	7,981	4,944	0	1,760	4,318
Belgium	15,383	10,878	15,683	941	2,439
Denmark	311	123	177	239	469
Fr Germ	313	2,954	3,687	282	270
Haiti	0	0	25	53	53
Mexico	806	775	636	118	42
All other	12,894	12,097	12,055	2,793	39
Total	64,716	48,564	49,908	23,832	20,808
	Value (1,000 dollars)				
Canada	9,479	8,871	7,372	6,085	5,190
U King	12,769	2,399	462	1,175	2,477
Brazil	6,715	2,875	-	491	1,080
Belgium	20,843	6,387	5,250	150	621
Denmark	567	152	375	479	496
Fr Germ	684	1,709	1,644	156	162
Haiti	-	-	15	33	40
Mexico	352	242	324	36	13
All other	8,858	8,185	4,142	1,979	32
Total	60,267	30,819	19,585	10,583	10,112
	Unit value (per metric ton) 2/				
Canada	-	-	-	-	-
U King	-	-	-	-	-
Brazil	-	-	-	-	-
Belgium	-	-	-	-	-
Denmark	-	-	-	-	-
Fr Germ	-	-	-	-	-
Haiti	-	-	-	-	-
Mexico	-	-	-	-	-
All other	-	-	-	-	-
Average	931.25	634.61	392.43	444.08	485.99

1/ Table number 22 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Manganese (TSUS Item 601.27)

U.S. producers

The number of domestic producers producing ferruginous manganese and manganiferous ores declined from six firms in 1980 to five firms in 1984, with one firm located in Minnesota and four firms in South Carolina. Employment in 1984 was 13 production workers, representing a decline from an estimated 30 in 1980.

U.S. customs treatment

The rates of duty applicable to manganese appear in table 35. An excerpt from the TSUSA covering manganese ore and an explanation of the various rates of duty are provided in appendix A. All items were eligible products from countries designated as beneficiary countries for purposes of the CBERA.

Table 35.--Manganese: U.S. rates of duty, by TSUS items

(Cents per pound)

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.27	Manganese ore, including ferruginous manganese ore, and manganiferous iron ore, all the foregoing containing over 10 percent by weight of manganese 2/	0.12¢ on manganese content	Free	Free	Free	Free	Free	Free	Free	Free	1¢ on manganese content

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1/ Rate effective prior to Jan. 1, 1980.

2/ Classified under TSUS items 911.0720, 911.0740, and 911.0760 during 1978 and 1979.

U.S. consumption

Reported consumption of manganese ores stabilized at 1.1 million short tons ($58.2 to $58.3 million) in 1980 and in 1981, and then dropped 52 percent to 531,000 short tons ($27.6 million) in 1983, reflecting both a decrease in steel output and a reduction in inventories by producers. U.S. consumption then increased 7 percent to 570,000 tons ($29.6 million) in 1984 principally due to the increase in steel consumption (table 36). Imports accounted for a fluctuating share of U.S. consumption, from a low of 38 percent in 1982 to a peak of 69 percent in 1983.

U.S. production

Mine shipments of ferruginous manganese ores and manganiferous iron ores were at the 174,000 short tons ($2.4 million) and the 176,000 short tons ($2.9 million) level in 1981, and then fell 82 percent to 32,000 short tons ($293,000) in 1982 (table 36). U.S. production then increased annually to 50,000 short tons ($300,000) in 1984, as a result of increased demand in steel production.

In 1982, the President announced that a portion of the stockpiled manganese ore would be upgraded into high-carbon ferromanganese as part of a program to maintain our domestic ferroalloy furnace and processing capacity. The plan, which was put into operation in 1983, called for production of about 577,000 tons of ferromanganese over a 10-year period.

Manganese ores are on the critical and strategic materials list and are stockpiled by the U.S. Government. The status of the stockpile, as of November 30, 1984, 1/ is as follows (in thousands of short tons):

Material	Goal	Total inventory	Authorized for disposal	Sales, 11 months
Natural ore	62	176	18	6
Chemical ore	170	172	-	20
Metallurgical ore	2,700	2,368	-	-

U.S. trade

U.S. imports.--Imports of manganese ore declined 66 percent during 1980-82, from 698,015 short tons ($46.4 million) in 1980 to 237,757 short tons ($16.2 million) in 1982 (table 37) due to the reduced demand of U.S. producers of manganese ferroalloys. In 1983, imports increased to 368,298 short tons ($19.9 million) due to an increase in demand for ferromanganese, and then dropped to 324,675 short tons ($14.2 million) in 1984. The leading suppliers during 1980-84 continued to be Gabon (41.0 percent in 1984), Brazil (24.0 percent in 1984), South Africa (11.3 percent in 1984), and Australia (11.1 percent in 1984).

The transportation cost from the principal supplying countries to Ohio River ports is estimated to be between 40 to 50 percent of the delivered price of manganese ore. Transportation is a critical but unavoidable cost factor in the purchase of manganese ores since the United States relies wholly on imported ores to supply its steel industry.

No products were imported during 1984 from countries designated as beneficiary countries for purposes of the CBERA, and no items were eligible for preferential treatment under the GSP.

U.S. exports.--Exports of manganese ore increased from 53,000 short tons ($6.4 million) in 1980 to 69,421 short tons ($6.6 million) in 1981 before falling to 19,511 short tons ($2.2 million) in 1983 (table 38) because of a decreased demand for steel. According to the Bureau of Mines, U.S. exports of 237,705 short tons ($15.7 million) in 1984 represented accumulated dealer's stockpiles shipped from the United States. Approximately 80 percent of U.S. exports were to Canada and Mexico during 1980-84. According to the U.S. Bureau of Mines, exports of manganese ore during 1980-84 were reexports consisting of metallurgical ore and of imported manganese dioxide ore, some of which was ground, blended, or otherwise classified in the United States and shipped elsewhere. (Since there is no domestic production of manganese ore over 35 percent or more manganese, exports as a share of production are nonexistent). The trade deficit in manganese ore between 1980 and 1983 averaged approximately $27 million per year, declining to $18 million in 1983. In 1984, there was a trade surplus of $1.5 million.

1/ FEMA and the U.S. Bureau of Mines.

Table 36. 1/--Manganese ore: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in thousands of short tons, gross weight; value in thousands of dollars; unit value per short ton)

Year	Production 2/	Exports	Imports	Reported consumption	Ratio (percent) of imports to consumption
	Quantity				
1980	174	53	698	1,071	65
1981	176	69	639	1,077	60
1982	32	29	238	609	38
1983	34	20	368	531	69
1984	3/ 50	238	325	3/ 570	57
	Value				
1980	2,444	6,406	46,432	58,252	78
1981	2,890	6,578	42,643	58,222	74
1982	293	2,602	16,160	43,160	43
1983	216	2,167	19,868	27,612	72
1984	3/ 300	15,727	14,217	3/ 29,640	48
	Unit value				
1980	$14.05	$28.88	$66.52	-	-
1981	16.42	94.76	66.72	-	-
1982	9.16	88.48	67.97	-	-
1983	6.35	111.07	53.94	-	-
1984	6.00	66.16	43.76		

1/ Table 24 in the original summary.

2/ There is no domestic production of manganese ore containing 35 percent or more manganese. Production figures represent manganese ores containing 10 to 35 percent manganese and manganiferous ores containing 5 to 10 percent manganese.

3/ Preliminary data.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

Table 37. 1/--Manganese ore: U.S. imports for consumption, by principal sources, 1980-84

~~Source~~	~~1980~~	~~1981~~	~~1982~~	~~1983~~	~~1984~~
	Quantity (short tons)				
Congo	~~0~~	~~0~~	~~0~~	0	0
Mexico	44,179	64,982	3,276	63,588	40,831
Brazil	69,670	76,253	5,167	78,923	77,914
Austral	205,388	65,762	36,884	29,319	36,179
Rep saf	208,978	227,211	131,792	25,406	36,689
Gabon	159,960	179,528	46,059	171 ,018	132,985
Morocco	~~9,840~~	~~25,407~~	9,345	39	77
Canada	0	0	4,242	0	0
All other	0	0	0	0	0
Total	698,015	3/ 639,143	3/ 237,757	3/ 368 ,298	3/ 324,675
	Value (1,000 dollars)				
Congo	-	-	-	3	-
Mexico	2,229	4,504	345	3,576	1,220
Brazil	3,663	5,291	344	3,742	2,939
Austral	14,467	5,028	2,667	1,740	2,434
~~Rep Saf~~	~~11,296~~	~~10,522~~	~~9,159~~	~~1,170~~	1,194
Gabon	13,610	13,592	3,514	9,628	6,409
Morocco	1, 166	2,717	968	12	21
Canada	-	-	153	-	0
All other	0	7	0	0	0
Total	46,432	42,643	16,160	19,868	14,212
	Unit value (per short ton) 2/				
Congo					
Mexico					
~~Brazil~~					
Austral					
Rep Saf					
Gabon					
Morocco					
Canada					
~~All other~~					
Average	66.52	66.72	67.97	53.94	43.76

1/ Table number 26 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and

3/ Import data adjusted by the U.S. Bureau of Mines.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 38 1/—Manganese ore: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (short tons)				
France	111	294	1	0	109,664
Canada	24,917	32,050	17,203	12,625	54,859
Italy	59	0	0	0	38,191
Mexico	10,642	29,164	8,939	357	25,997
Colomb	20	10	1,653	0	6,563
Japan	0	0	0	0	1,474
Egypt	0	0	0	0	591
Brazil	0	0	0	4,509	32
All other	17,253	7,903	1,608	2,020	354
Total	53,000	69,421	29,404	19,511	237,725
	Value (1,000 dollars)				
France	8	20	1	1	6,300
Canada	2,241	2,476	1,403	1,030	4,225
Italy	4	-	-	-	2,212
Mexico	828	2,328	651	25	1,705
Colomb	34	2	309	-	595
Japan	-	-	-	133	370
Egypt	-	-	-	200	197
Sweden	-	-	-	-	47
All other	3,291	1,752	238	778	76
Total	6,406	6,578	2,602	2,167	15,727
	Unit value (per short ton) 2/				
France					
Canada					
Italy					
Mexico					
Colomb					
Japan					
Egypt					
Sweden					
All other					
Average	28.88	94.76	88.48	111.07	66.16

1/ Table number 25 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Mercury (TSUS item 601.30)

U.S. industry

In 1984, the domestic producing industry was composed of three mines, all operating in Nevada. One mine produced only mercury, while the other two mines produced mercury as a byproduct of gold mining operations. In 1980, there were only two domestic mine producers, one in California and one in Nevada. Industry mine and mill employment declined slightly from 46 employees in 1980 to 43 employees in 1984.

U.S. customs treatment

The rates of duty applicable to imports of mercury ore covered by this supplement are shown in table 39. An excerpt from the TSUSA covering mercury articles and an explanation of the various rates of duty are provided in appendix A. Imports of mercury ore are eligible for duty-free treatment under the CBERA.

Table 39.--Mercury: U.S. rates of duty, by TSUS item

TSUS item No.	Description	Pre-MTN col.1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--				Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--Continued				Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.30	Mercury ore------------------------	Free	2/	2/	2/	2/	2/	2/	2/	2/	Free.

1/ Rate effective prior to Jan. 1, 1980.

2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption and production

Apparent consumption of mercury ore declined erratically from 1,165 short tons in 1980 to 725 short tons in 1984 because of the decreased demand for mercury by manufacturers of batteries and chlorine and caustic soda (table 40). U.S. mercury mine production, which accounts for nearly 100 percent of U.S. consumption, declined from 1,165 short tons in 1980 to 724 short tons in 1984 due to the large amount of mercury available in the market from secondary producers and due to the depressed world prices for mercury ore. Except for 1982 when imports accounted for 13 percent of apparent consumption, imports have been nil or negligible. The United States accounted for 10 percent of the world's mine production of mercury in 1984, compared to 16 percent in 1980.

U.S. trade

U.S. imports.--There were no imports of mercury ores in 1980 and 1981 (table 41). Imports increased to 159 short tons ($306,000) in 1982 due to shipments of 129 short tons from Gabon and 30 short tons from Peru before falling to 1 short ton from West Germany in 1983 and 1984.

U.S. exports.--Exports of mercury ores, which are not separately reported in official U.S. statistics, are considered to be negligible.

Table 40. 1/--Mercury ore: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in short tons; value in thousands of dollars; unit value per short ton)

Year	Production 2/	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1980	3/ 1,165	4/	0	3/ 1,165	0
1981	1,060	4/	0	1,060	0
1982	979	4/	159	1,138	14
1983	953	4/	1	954	5/
1984	724	4/	1	725	5/
	Value				
1980	6/	4/	-	6/	6/
1981	6/	4/	-	6/	6/
1982	6/	4/	306	6/	6/
1983	6/	4/	30	6/	6/
1984	6/	4/	44	6/	6/
	Unit value				
1980	-	-	-	-	-
1981	-	-	-	-	-
1982	-	-	-	-	-
1983	-	-	-	-	-
1984	-	-	-	-	-

1/ Table 27 in the original summary.

2/ Mercury ore treated, metal content.

3/ Revised.

4/ Exports are not separately reported in official U.S. statistics but are considered to be negligible.

5/ Less than 0.5 percent.

6/ Not available.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

Table 41. 1/--Mercury ore: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (short tons)				
Fr Germ	0	0	0	1	1
Gabon	0	0	129	0	0
Peru	0	0	30	0	0
Total	0	0	159	1	1
	Value (1,000 dollars)				
Fr Germ	-	-	-	30	44
Gabon	-	-	197	-	-
Peru	-	-	110	-	-
Total	-	-	306	30	44
	Unit value (per short ton) 2/				
Fr Germ	-	-	-	-	-
Gabon	-	-	-	-	-
Peru	-	-	-	-	-
Average	-	-	-	-	-

1/ Table number 28 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Molybdenum (TSUS items 601.33-603.40)

U.S. industry

Four firms in Colorado, Idaho, Nevada, and New Mexico mined molybdenum ore in 1984. Nine firms in Arizona, California, and Utah recovered molybdenum as a byproduct or coproduct of copper, tungsten, and uranium ore. The most significant change in the industry during 1980-84 was a shift in molybdenum supply sources. The major molybdenum ore miner in Colorado suspended operations in 1982, and two new mines (one in Idaho and one in Nevada) came on-stream in 1983. Two copper producers who also recovered molybdenum ceased operations (one in 1982 and one in 1983), while a major copper producer began molybdenum recovery operations in 1982. According to the U.S. Bureau of Mines, employment at mines and mills recovering molybdenum as the principal product declined 60 percent during 1980-83, dropping from 6,300 persons 1/ in 1980 to 2,500 persons in 1983 as a result of industry restructuring and low production levels. Employment increased to 3,600 persons in 1984 as mine production increased.

U.S. customs treatment

The rates of duty for imports of molybdenum ore and metal-bearing materials are shown in table 42. Imports of molybdenum and metal-bearing materials qualify for duty-free treatment under the CBERA. The items eligible for preferential treatment under the GSP are also shown in this table. In 1984, Mexico lost GSP eligibility for TSUS item 601.33 but regained duty-free treatment in 1985.

1/ Revised.

Table 42.--Molybdenum: U.S. rates of duty, by TSUS items

(Cents per pound on molybdenum content; percent ad valorem)

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.33A	Molybdenum ore	12¢	11.6¢	11.3¢	10.9¢	10.5¢	10.1¢	9.8¢	9.4¢	9¢	35¢.
603.40A*	Materials in chief value of molybdenum.	10¢ + 3%	9.5¢ + 2.9%	9¢ + 2.7%	8.5¢ + 2.6%	8¢ + 2.5%	7.5¢ + 2.3%	7¢ + 2.2%	6.5¢ + 2%	6¢ + 1.9%	50¢ + 15%.

1/ The designation "A" or "A*" indicates that the item is currently designated as an eligible article for duty-free treatment under the U.S. GSP. "A" indicates that all beneficiary developing countries are eligible for GSP. "A*" indicates that certain of these countries, specified in general headnote 3(c) of the TSUSA, are not eligible.

2/ Rate effective prior to Jan. 1, 1980.

U.S. consumption

Reported consumption of molybdenum metal-bearing materials declined 75 percent from 108.2 million pounds ($657.9 million) in 1980 to 27.0 million pounds ($182.2 million) in 1983 (table 43). Consumption in 1984 increased to 31.9 million pounds ($104.1 million). The downward trend in consumption during 1980-83 reflected the effect that the generally depressed economic conditions had on all of the end-use molybdenum markets, especially the steel, cast iron, and superalloy industries. Consumption recovered in 1984 due to increases in steel production and increased use of superalloys in military aircraft applications. The portion of U.S. consumption supplied by imports rose annually from 3 percent in 1980 to 17 percent in 1983 and 1984.

U.S. production

Mine production declined 78 percent during 1980-83, from 150.7 million pounds ($1.3 billion) in 1980 to 33.6 million pounds ($166.6 million) in 1983 (table 43). During the second half of 1981 and in 1982 and 1983, domestic producers reduced production, closed mines, and canceled or extended new project development to correct oversupply conditions. Mine production in 1984 recovered to 103.7 million pounds ($327.3 million) due to the economic upswing and reopening of mines closed in 1983. The United States accounted for 48.5 percent of the world's mine production of molybdenum in 1984 compared to 61 percent in 1980.

U.S. trade

U.S. imports.--Imports of molybdenum metal-bearing materials declined from 3.8 million pounds ($29.2 million) in 1980 to 3.6 million pounds ($19.5 million) in 1981, before rising to 5.9 million pounds ($25.6 million) in 1982 (table 44). Imports declined again to 4.6 million pounds ($15.6 million) in 1983 before rising to 5.3 million pounds ($19.6 million) in 1984 in response to renewed end-use market demand. Imports increased during this period because of their price advantage over domestically mined molybdenum in the U.S. market resulting from an oversupply situation during a time of weak global demand. The principal supplying countries in 1980-84 were Canada, Chile, and Mexico. There were no CBERA imports of molybdenum ore and metal-bearing materials in 1984. GSP imports accounted for less than 1 percent of total imports in 1984. Transportation costs are an insignificant cost factor in the marketing of molybdenum ore and metal-bearing materials. Estimated transportation costs associated with U.S. imports of the products covered averaged approximately 2 percent of the customs value during 1980-84.

U.S. exports.--Exports of molybdenum metal-bearing materials declined 31 percent during 1980-83, dropping from 68.2 million pounds ($715.4 million) in 1980 to 47.1 million pounds ($185.1 million) in 1983, as higher priced U.S. molybdenum was less competitive during world oversupply conditions and a declining demand (table 45). Exports rose to 63.4 million pounds ($242.8 million) in 1984 as world demand began to recover. The major U.S. export markets during 1980-84 were the Netherlands (accounting for more than a third of U.S. molybdenum exports), West Germany, Belgium, Japan, and the United Kingdom. U.S. exports as a percentage of production fluctuated from a low of 37 percent in 1981 to a high of 140 percent in 1983. In 1984, the ratio equaled 61 percent. The U.S. trade surplus in molybdenum ore and metal-bearing materials fluctuated between a low of $169.5 million in 1983 to a peak of $686.3 million in 1980.

Table 43. 1/--Molybdenum ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in thousands of pounds, contained molybdenum; value in thousands of dollars; unit value per pound, contained molybdenum)

Year	Production	Exports	Imports	Reported consumption	Ratio (percent) of imports to consumption
	Quantity				
1980	150,686	68,217	3,778	108,206	3
1981	139,900	51,349	3,639	80,725	5
1982	84,381	49,783	5,864	49,444	12
1983	33,593	47,068	4,566	27,014	17
1984	103,664	63,366	5,294	31,902	17
	Value				
1980	2/ 1,344,181	715,431	29,176	2/ 657,926	4
1981	945,540	406,817	19,485	558,208	3
1982	504,089	232,214	25,572	297,447	9
1983	166,612	185,123	15,635	3/ 182,247	9
1984	327,282	242,770	19,624	104,136	19
	Unit value				
1980	$8.92	$10.49	$7.72	-	-
1981	6.76	7.92	5.36	-	-
1982	5.97	4.66	4.36	-	-
1983	4.96	3.93	3.42	-	-
1984	3.16	3.83	3.71	-	-

1/ Table 29 in the original summary.

2/ Revised.

3/ Exports are believed to be primarily from producer inventories, and are therefore excluded from 1983 consumption value calculation.

Source: Compiled from official statistics of the U.S. Department of Commerce and the U.S. Bureau of Mines.

Table 44. 1/--Molybendum ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (pounds, contained weight)				
Chile	1,768,272	1,192,992	1,954,147	2,033,387	4,192,838
Canada	1,284,677	1,747,504	1,984,036	946,774	1,014,836
Mexico	14,897	3,346	610,563	1,207,440	26,932
Belgium	0	121,424	24,692	314,239	41,976
U King	0	0	324,572	38,272	17,710
Phil R	62,385	135,395	54,762	21,842	0
Fr Germ	0	1,276	39,800	3,952	0
Peru	641,928	234,322	531,455	0	0
All other	5,700	202,333	339,789	0	0
Total	3,777,859	3,638,592	5,863,816	4,565,906	5,294,292
	Value (1,000 dollars)				
Chile	16,025	7,793	8,388	6,865	15,997
Canada	6,226	8,622	9,861	3,611	3,185
Mexico	110	3	2,298	3,994	182
Belgium	-	635	90	1,004	169
U King	-	-	1,489	109	92
Phil R	629	721	84	35	-
Fr Germ	-	34	239	17	-
Peru	6,176	1,390	1,816	-	-
All other	10	286	1,307	-	-
Total	29,176	19,485	25,572	15,635	19,624
	Unit value (per pound, contained weight) 2/				
Chile	-	-	-	-	-
Canada	-	-	-	-	-
Mexico	-	-	-	-	-
Belgium	-	-	-	-	-
U King	-	-	-	-	-
Phil R	-	-	-	-	-
Fr Germ	-	-	-	-	-
Peru	-	-	-	-	-
All other	-	-	-	-	-
Average	7.72	5.36	4.36	3.42	3.71

1/ Table number 31 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 45. 1/--Molybendum ore and metal bearing material: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (pounds, contained weight)				
Nethlds	24,642,028	22,026,538	20,688,261	20,700,117	34,914,346
Japan	12,654,140	7,958,396	5,411,426	4,530,691	6,896,496
U King	2,003,036	3,500,948	4,740,151	5,208,426	7,863,059
Belgium	11,412,463	2,517,888	2,458,035	4,354,027	5,146,014
Fr Germ	9,076,807	5,079,641	7,502,279	6,147,499	6,575,623
Sweden	2,600,639	1,839,851	1,928,282	1,474,993	788,823
Rep Saf	261,935	162,404	193,734	150,923	327,645
Chile	311,861	2,314,664	3,197,189	1,393,700	207,535
All other	5,254,311	5,948,351	3,663,300	3,107,561	646,587
Total	68,217,220	51,348,681	49,782,657	47,067,937	63,366,128
	Value (1,000 dollars)				
Nethlds	252,911	189,116	115,358	95,598	150,558
Japan	134,099	73,567	37,394	17,706	25,979
U King	20,974	20,047	15,191	14,336	23,057
Belgium	129,004	24,069	14,312	20,171	22,629
Fr Germ	94,824	30,374	22,712	20,918	14,936
Sweden	27,536	13,556	5,099	3,032	1,673
Rep Saf	2,350	1,281	1,118	410	1,380
Chile	2,055	7,691	6,062	1,988	679
All other	51,679	47,115	14,969	10,964	1,877
Total	715,431	406,817	232,214	185,123	242,770
	Unit value (per pound, contained weight) 2/				
Nethlds	-	-	-	-	-
Japan	-	-	-	-	-
U King	-	-	-	-	-
Belgium	-	-	-	-	-
Fr Germ	-	-	-	-	-
Sweden	-	-	-	-	-
Rep Saf	-	-	-	-	-
Chile	-	-	-	-	-
All other	-	-	-	-	-
Average	10.49	7.92	4.66	3.93	3.83

1/ Table number 30 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Nickel (TSUS items 601.36-603.60)

U.S. industry

The single U.S. firm mining nickel in Oregon ceased production in April 1982 and reopened in November 1983. Mine employment equaled an estimated 160 employees for each year during 1980-84.

U.S. customs treatment

The rates of duty applicable to imports of nickel covered by this supplement are shown in table 46. An excerpt from the TSUSA covering nickel articles and an explanation of the various rates of duty are provided in appendix A. All items are eligible for duty-free treatment under the CBERA.

Table 46.--Nickel: U.S. rates of duty, by TSUS items

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.36	Nickel ore----------------	Free	2/	2/	2/	2/	2/	2/	2/	2/	Free.
603.60	Materials containing, by weight, over 10 percent of nickel.	Free	2/	2/	2/	2/	2/	2/	2/	2/	Free.

1/ Rate effective prior to Jan. 1, 1980.

2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Apparent consumption of nickel metal-bearing materials rose from 52,362 short tons in 1980 to a peak of 59,957 short tons in 1981, before declining to a low of 28,310 short tons in 1983 (table 47). The nickel market was characterized by producer shutdowns and cutbacks worldwide, depressed demand, declining prices, and general oversupply conditions during 1981-83. In 1984, consumption increased 81 percent to 51,299 short tons as demand for nickel for use in the production of stainless and alloy steel increased. The portion of U.S. consumption supplied by imports rose annually from 72 percent in 1980 to 100 percent in 1983 before declining to 72 percent in 1984.

U.S. production

Mine production declined from 14,653 short tons in 1980 to no production in 1983 (table 47). This production decline resulted primarily from the curtailment of operations and ultimate closure of the sole domestic producer as the continued slump in the worldwide nickel market, a diminishing crude ore grade, and increased energy and labor costs, which caused overall production costs to exceed market prices. Production increased to 14,500 short tons in 1984 as the sole domestic producer resumed production as the economy improved. The United States accounts for 1.8 percent of the world's mine production of nickel compared to 1.7 percent of world mine production in 1980.

U.S. trade

U.S. imports.--Imports of nickel metal-bearing materials rose from 37,709 short tons ($207.9 million) in 1980 to a peak of 47,858 short tons ($257.4 million) in 1981, before declining to 27,312 short tons ($104.0 million) in 1982 (table 48). Imports increased in 1981 in spite of the weak domestic market as a result of consumer stockpiling, and then declined in 1982, reflecting the weak market and the reduction of consumer inventories. Imports increased to 36,799 short tons ($112.0 million) in 1984 as the end-use markets benefited from the economic recovery. The principal supplying countries during 1980-84 were Botswana, Australia, and Canada, major world nickel sources. Transportation costs are an insignificant cost factor in the marketing of nickel ore and metal-bearing materials. Estimated transportation costs associated with U.S. imports of the products covered averaged approximately 3 percent of the customs value during 1980-84.

U.S. exports.--U.S. exports of nickel are not separately reported in official statistics, but they are believed to be negligible.

Table 47. 1/--Nickel ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in short tons, contained weight; value in thousands of dollars; unit value per short ton, contained weight)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	14,653	2/	37,709	52,362	72
1981	12,099	2/	47,858	59,957	80
1982	3,203	2/	27,312	30,515	90
1983	0	2/	28,310	28,310	100
1984	14,500	2/	36,799	51,299	72
			Value		
1980	3/	2/	207,853	3/	3/
1981	3/	2/	257,385	3/	3/
1982	3/	2/	103,986	3/	3/
1983	3/	2/	80,804	3/	3/
1984	3/	2/	111,973	3/	3/
			Unit value		
1980	-	-	$5,512.03	-	-
1981	-	-	5,378.10	-	-
1982	-	-	3,807.34	-	-
1983	-	-	2,854.26	-	-
1984	-	-	3,042.83	-	-

1/ Table 32 in the original summary.

2/ Exports are not separately reported in official U.S. statistics, but are believed to be negligible.

3/ Not available.

Source: Compiled from official statistics of the U.S. Department of Commerce and the U.S. Bureau of Mines.

Table 48. 1/--Nickel ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (short tons, contained weight)				
Botswan	15,608	24,625	14,072	16,354	21,324
Austral	9,334	10,147	9,868	10,684	13,487
Canada	1,576	1,711	726	1,060	1,954
Phil R	0	0	0	0	26
U King	0	0	0	44	3
Spain	0	0	10	0	4
Fr Germ	1	0	0	107	0
Brazil	0	0	0	0	1
All other	11,190	11,375	2,636	61	0
Total	37,709	47,858	27,312	28,310	36,799
	Value (1,000 dollars)				
Botswan	86,978	131,384	49,064	40,886	54,781
Austral	50,362	54,461	39,308	33,183	48,505
Canada	9,781	10,353	4,028	5,991	8,540
Phil R	-	-	-	-	91
U King	-	-	-	195	36
Spain	-	-	16	-	13
Fr Germ	32	-	1	434	4
Brazil	-	-	-	1	3
All other	60,700	61,187	11,569	114	1/
Total	207,853	257,385	103,986	80,804	111,973
	Unit value (per short ton, contained weight) 2/				
Botswan	-	-	-	-	-
Austral	-	-	-	-	-
Canada	-	-	-	-	-
Phil R	-	-	-	-	-
U King	-	-	-	-	-
Spain	-	-	-	-	-
Fr Germ	-	-	-	-	-
Brazil	-	-	-	-	-
All other	-	-	-	-	-
Average	5,512.03	5,378.10	3,807.34	2,854.26	3,042.83

1/ Table number 33 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Precious Metals--Gold (TSUS items 601.39-603.65)

U.S. industry

The domestic gold mining industry consists of about 160 lode mines, nearly all in Western States, and several dozen placer mines, nearly all in Alaska, compared to 155 lode mines in 1980. In 1984, 25 mines yielded 76 percent of the gold produced, compared with 95 percent in 1980. Mine and mill employment rose from 5,500 in 1980, peaked at 7,500 in 1981, and then fell to 5,000 by 1984. 1/

U.S. customs treatment

The rates of duty for imports of gold ores covered by the supplement are shown in table 49. The items eligible for preferential treatment under the GSP are also shown in this table. All items are eligible for duty-free treatment under the CBERA. An excerpt from the TSUSA covering gold articles and an explanation of the various rates of duty are provided in appendix A.

U.S. consumption

Apparent consumption of gold metal-bearing materials rose gradually from 1.0 million troy ounces ($618.8 million) in 1980 to 2.5 million troy ounces ($905.2 million) in 1984, a 150-percent increase (table 50). However, this increase has been more than offset by other factors, such as a reduction in scrap-based gold production, which has kept the reported consumption of gold in industrial and arts uses roughly the same in 1984 (3 million troy ounces) as it was in 1980 (3.2 million troy ounces). 2/ The portion of U.S. consumption supplied by imports rose from 6 percent in 1980 and 1981 to 12 percent in 1982, before declining to 8 percent in 1984.

U.S. production

Mine production followed the same trend as apparent consumption, rising 137 percent during 1980-84, from 970,000 troy ounces ($594.1 million) in 1980 to an estimated 2.3 million troy ounces ($840.0 million) in 1984 (table 50). High gold prices in 1980 stimulated exploration and development activity, especially in the Western States, and this activity continued during 1981-84 even though the price of gold declined by almost a half. The exploration and discovery of new sources of gold became the principal target of many fuel and nonfuel mineral producers. Gold mine production increased in 1981 as new mines opened and lower grade deposits were further developed. A 4-month labor strike at the Nation's largest gold mine, and economic problems that severely curtailed byproduct gold recovery from copper mine production, combined to reduce the flow of gold in 1982. This lost production was offset to some extent, however, by increased production from newly opened gold mines. Most domestic gold mines operated at 90 percent or better of capacity during 1981-84. The United States has gold resources of 280 million troy ounces,

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1/ Revised.
2/ U.S. Bureau of Mines, Mineral Yearbook 1985.

Table 49.—Gold: U.S. rates of duty, by TSUS items

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1— 3/								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.39	Precious metal ores — gold content—	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
601.66	Ores containing more than 2 percent by weight of any one or more of the metals lead, zinc, or copper, as determined by chemical analysis without deductions, to be initially treated at a lead,zinc, copper, or other plant (gold content).	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
603.50A	Materials, other than tne foregoing, containing, by weight, over 10 percent of any one of the metals copper, lead, or zinc, and to be initially treated at a copper, lead, or zinc plant (gold content).	0.8¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.74¢/lb. on copper content + 0.69¢/lb. on lead content + 0.62¢/lb. on zinc content.	0.68¢/lb. on: copper content + 0.64¢/lb. on: lead content + 0.58¢/lb. on: zinc content.	0.62¢/lb. on copper content + 0.58¢/lb. on lead content + 0.53¢/lb. on zinc content.	0.56¢/lb. on copper content + 0.52¢/lb. on lead content + 0.48¢/lb. on zinc content.	0.5¢/lb. on copper content + 0.47¢/lb. on lead content + 0.44¢/lb. on zinc content.	0.44¢/lb. on copper content + 0.41¢/lb. on lead content + 0.39¢/lb. on zinc content.	0.38¢/lb. on copper content + 0.36¢/lb. on lead content + 0.35¢/lb. on zinc contert.	0.32¢/lb. on copper content + 0.3¢/lb. on lead content + 0.3¢/lb. on zinc content.	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.
603.55A	Materials, other than the foregoing, containing, by weight, over 5 troy ounces of gold per short ton, or over 100 troy ounces of precious metals per short ton (gold content).	0.8¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.7¢/lb. on copper content + 0.66¢/lb. on lead content + 0.59¢/lb. on zinc content.	0.6¢/lb. on: copper content + 0.56¢/lb. on: lead content + 0.5¢/lb. on: zinc content.	0.5¢/lb. on copper content + 0.47¢/lb. on lead content + 0.42¢/lb. on zinc content.	0.4¢/lb. on copper content + 0.37¢/lb. on lead content + 0.33¢/lb. on zinc content.	0.3¢/lb. on copper content + 0.28¢/lb. on lead content + 0.25¢/lb. on zinc content.	0.2¢/lb. on copper content + 0.19¢/lb. on lead content + 0.17¢/lb. on zinc content.	0.1¢/lb. on copper content + 0.09¢/lb. on lead content + 0.08¢/lb. on zinc content.	Free	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.
603.65A	Materials, other than the foregoing, which are residues not advanced in value or condition by any means, and which if containing over 2 percent by weight of copper, lead, or zinc are not to be treated for the recovery thereof (gold content).	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.

1/ The designation "A" indicates that the item is currently designated as an eligible article for duty-free treatment under the GSP and that all beneficiary developing countries are eligible for the GSP.

2/ Rate effective prior to Jan. 1, 1980.

3/ Ra[illegible] modified in the Tokyo round of the Multilateral Trade Negotiati[illegible]

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much of which is in the form of byproduct gold. 1/ This represents about 13 percent of the world's total resources. In 1984, the United States produced 5.1 percent of the world's mine production of gold, up from 2.5 percent in 1980. 2/

U.S. trade

U.S. imports.--Imports of gold metal-bearing materials more than tripled during 1980-83, rising steadily from 62,618 troy ounces ($35.8 million) in 1980 to 231,148 troy ounces ($92.3 million) in 1983. Imports declined to 195,100 troy ounces ($65.8 million) in 1984 (table 51). The principal supplying countries in 1980-84 were Chile, Canada, the Philippines, and Peru. The substantial rise in imports of gold metal-bearing materials during 1980-83 was primarily attributable to the increased U.S. demand for gold not met by domestic production, and a worldwide production increase resulting from the higher gold prices. Transportation costs are an insignificant cost factor in the marketing of gold ores and metal-bearing materials. Estimated transportation costs associated with U.S. imports of the products covered averaged less than one percent of the customs value during 1980-84.

U.S. exports.--Exports of gold metal-bearing materials declined during 1980-82, dropping from 23,121 troy ounces ($11.0 million) in 1980 to 3,092 troy ounces ($1.0 million) in 1982. U.S. exports then rose in 1983 to 12,757 troy ounces ($5.2 million), before falling to 2,298 troy ounces ($545,000) in 1984 (table 52). The major export markets during 1980-84 were West Germany, Canada, and Switzerland. Exports as a percentage of U.S. production reached a high of 2 percent in 1980. The U.S. trade deficit in gold ores and metal-bearing materials increased from $24.8 million in 1980 to $87.2 million in 1983, before declining to $65.2 million in 1984.

1/ U.S. Bureau of Mines, Mineral Commodity Summaries 1985.
2/ Revised.

Table 50. 1/--Precious metal ores and metal-bearing materials--Gold: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in thousands of troy ounces; value in thousands of dollars; unit value per troy ounce)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	2/ 970	23	63	2/ 1,010	6
1981	1,379	4	95	1,470	6
1982	1,466	3	195	1,658	12
1983	1,957	13	231	2,175	11
1984	3/ 2,300	3	195	2,492	8
			Value		
1980	2/ 594,050	10,998	35,776	2/ 618,828	6
1981	633,918	1,779	40,083	672,222	6
1982	550,968	1,028	66,922	616,862	11
1983	829,929	5,190	92,346	917,085	10
1984	3/ 840,000	545	65,784	905,239	7
			Unit value		
1980	2/ $612.42	$475.68	$571.34	-	-
1981	459.69	464.79	421.37	-	-
1982	375.83	332.62	343.81	-	-
1983	424.08	406.81	399.51	-	-
1984	365.22	165.33	337.18	-	-

1/ Table 34 in the original summary.
2/ Revised.
3/ Estimated by the U.S. Bureau of Mines.

Source: Compiled from official statistics of the U.S. Department of Commerce and the U.S. Bureau of Mines.

Table 51. 1/--Precious metal ores and metal bearing material - gold: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (troy ounces)				
Chile	32,567	59,271	126,405	126,169	112,007
Canada	12,588	13,462	25,559	34,565	19,908
Peru	10,630	9,839	12,344	18,099	16,268
Mexico	1,135	1,798	3,934	1,332	14,376
Phil R	0	0	18,386	33,995	15,830
Spain	0	0	0	0	5,971
Guyana	1,869	2,449	1,345	2,562	2,988
Belgium	0	0	0	1,430	1,015
All other	3,829	8,307	6,678	12,996	6,737
Total	62,618	95,126	194,651	231,148	195,100
	Value (1,000 dollars)				
Chile	17,878	24,242	41,496	50,125	36,385
Canada	7,451	6,259	8,880	14,753	7,302
Peru	6,520	4,423	4,685	7,002	6,019
Mexico	655	793	1,324	562	5,706
Phil R	-	-	7,722	13,265	4,701
Spain	-	-	-	-	2,072
Guyana	694	935	353	817	943
Belgium	-	-	-	581	549
All other	2,578	3,432	2,463	5,242	2,108
Total	35,776	40,083	66,922	92,346	65,784
	Unit value (per troy ounce) 2/				
Chile	-	-	-	-	-
Canada	-	-	-	-	-
Peru	-	-	-	-	-
Mexico	-	-	-	-	-
Phil R	-	-	-	-	-
Spain	-	-	-	-	-
Guyana	-	-	-	-	-
Belgium	-	-	-	-	-
All other	-	-	-	-	-
Average	571.34	421.37	343.81	399.51	337.18

1/ Table number 36 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 52. 1/--Precious metal ores and metal bearing material - gold: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (troy ounces)				
Canada------	765	1,861	1,071	12,442	1,217
Switzld-----	1,359	0	0	0	1,473
France------	0	0	25	86	482
N Antil-----	14	150	176	33	101
Japan-------	374	0	84	6	25
Fr Germ-----	0	114	1,721	66	0
Nethlds-----	16	28	0	39	0
Israel------	0	62	0	45	0
All other---	20,593	1,612	15	40	0
Total---	23,121	3,827	3,092	12,757	3,298
	Value (1,000 dollars)				
Canada------	222	790	343	5,092	223
Switzld-----	352	-	-	-	207
France------	-	-	8	26	83
N Antil-----	4	51	53	10	29
Japan-------	102	-	8	3	3
Fr Germ-----	-	34	612	33	-
Nethlds-----	5	9	-	12	-
Israel------	-	12	-	6	-
All other---	10,313	884	4	8	-
Total---	10,998	1,779	1,028	5,190	545
	Unit value (per troy ounce) 2/				
Canada------	-	-	-	-	-
Switzld-----	-	-	-	-	-
France------	-	-	-	-	-
N Antil-----	-	-	-	-	-
Japan-------	-	-	-	-	-
Fr Germ-----	-	-	-	-	-
Nethlds-----	-	-	-	-	-
Israel------	-	-	-	-	-
All other---	-	-	-	-	-
Average--	475.68	464.79	332.62	406.81	165.33

1/ Table number 35 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Precious Metals--Silver (TSUS items 601.39-603.65)

U.S. industry

Silver was produced at more than 170 mines in 1984, down substantially from more than 225 mines in 1980. Five States--Idaho, Montana, Arizona, Utah, and Nevada--accounted for 87 percent of the 1984 mine production. Compared with the industry in 1980, Colorado and Missouri are no longer considered major silver producing States, whereas Nevada emerged as a principal ore source. Closings in silver and copper operations occurred in 1982 due to low metals prices and increasing production costs. Higher prices for metals in 1983 prompted the reopening and capacity expansion of existing mining operations, along with the opening of new operations. Precious metals mines grew in significance as a source of domestic silver, although the importance of base metal mines (copper, lead, and zinc mines) was greatly reduced. Mine and mill employment rose from 2,400 1/ persons in 1980 to 3,600 in 1981, before falling to 2,600 in 1984.

U.S. customs treatment

The rates of duty applicable to imports of silver covered by this supplement appear in table 53. The items eligible for preferential treatment under the GSP are also shown in this table. All items are eligible for duty-free treatment under the CBERA. An excerpt from the TSUSA covering silver articles and an explanation of the various rates of duty are provided in appendix A.

U.S. consumption

Apparent consumption of silver metal-bearing materials rose 34 percent from 41.4 million troy ounces ($840.7 million) in 1980 to 55.5 million troy ounces ($628.3 million) in 1983. This was primarily due to the rise in industrial demand for silver as a fabricated product during 1980-82 (as prices declined 61 percent) and greater investor interest in silver in 1983 (table 54). Silver consumption for use in photography, catalysts, official U.S. coinage, sterlingware, and electrical contacts and conductors increased during this period. Industrial silver consumption then declined in 1983 due to the reduced demand for some electronic products, an upturn in silver prices, and rumors of a supply shortage which encouraged silver conservation by manufacturers. The weakness in silver prices during 1980-82 is largely attributed to the global recession, which tended to overshadow declining U.S. interest rates, and uncertainty concerning U.S. budget deficits that normally would have been expected to increase the demand and consequently the price of silver. In 1984, consumption of silver declined to 51.9 million troy ounces ($421.9 million) due to static industrial demand. The portion of U.S. consumption supplied by imports fluctuated between 17 percent and 23 percent during 1980-84.

1/ Revised.

Table 53.--Silver: U.S. rates of duty, by TSUS items

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1— 3/								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.39	Precious metal ores— silver content—	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
601.66	Ores containing more than 2 percent by weight of any one or more of the metals lead, zinc, or copper, as determined by chemical analysis without deductions, to be initially treated at a lead, zinc, copper, or other plant (silver content).	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
603.50A	Materials, other than the foregoing, containing, by weight, over 10 percent of any one of the metals copper, lead, or zinc, and to be initially treated at a copper, lead, or zinc plant (silver content).	0.8¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.74¢/lb. on copper content + 0.69¢/lb. on lead content + 0.62¢/lb. on zinc content.	0.68¢/lb. on copper content + 0.64¢/lb. on lead content + 0.58¢/lb. on zinc content.	0.62¢/lb. on copper content + 0.58¢/lb. on lead content + 0.53¢/lb. on zinc content.	0.56¢/lb. on copper content + 0.52¢/lb. on lead content + 0.48¢/lb. on zinc content.	0.5¢/lb. on copper content + 0.47¢/lb. on lead content + 0.44¢/lb. on zinc content.	0.44¢/lb. on copper content + 0.41¢/lb. on lead content + 0.39¢/lb. on zinc content.	0.38¢/lb. on copper content + 0.36¢/lb. on lead content + 0.35¢/lb. on zinc content.	0.32¢/lb. on copper content + 0.3¢/lb. on lead content + 0.3¢/lb. on zinc content.	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.
603.55A	Materials, other than the foregoing, containing, by weight, over 5 troy ounces of gold per short ton, or over 100 troy ounces of precious metals per short ton (silver content).	0.8¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.7¢/lb. on copper content + 0.66¢/lb. on lead content + 0.59¢/lb. on zinc content.	0.6¢/lb. on copper content + 0.56¢/lb. on lead content + 0.5¢/lb. on zinc content.	0.5¢/lb. on copper content + 0.47¢/lb. on lead content + 0.42¢/lb. on zinc content.	0.4¢/lb. on copper content + 0.37¢/lb. on lead content + 0.33¢/lb. on zinc content.	0.3¢/lb. on copper content + 0.28¢/lb. on lead content + 0.25¢/lb. on zinc content.	0.2¢/lb. on copper content + 0.19¢/lb. on lead content + 0.17¢/lb. on zinc content.	0.1¢/lb. on copper content + 0.09¢/lb. on lead content + 0.08¢/lb. on zinc content.	Free	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.
603.65A	Materials, other than the foregoing, which are residues not advanced in value or condition by any means, and which if containing over 2 percent by weight of copper, lead, or zinc are not to be treated for the recovery thereof (silver content).	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.

1/ The designation "A" indicates that the item is currently designated as an eligible article for duty-free treatment under the GSP and that all beneficiary developing countries are eligible for the GSP.

2/ Rat[illegible]effective prior to Jan. 1, 1980.

3/ Ra[illegible]t modified in the Tokyo round of the Multilateral Trade Negotiati[illegible]

U.S. production

Mine production rose from 32.3 million troy ounces ($667.3 million) in 1980 to 40.7 million troy ounces ($427.9 million) in 1981 before declining slightly to 40.2 million troy ounces ($320.0 million) in 1982 (table 54). Silver production rose to 43.4 million troy ounces ($496.7 million) in 1983 before declining to 41.6 million troy ounces ($338.7 million) in 1984. The low level of mine production in 1980 reflects strikes at copper mines producing byproduct silver and mines producing silver ores. Production rose in 1981 following the settlement of a strike at a top producing silver mine and the opening of new mining operations. Declining silver and copper prices, along with relatively high production costs, forced closings at a number of silver and copper mines in 1982, lowering byproduct silver recovery and silver ore production. The recovery of silver prices in 1983 prompted companies to upgrade existing facilities and reopen certain facilities closed during the 1982 recession. Higher precious metal prices, along with continued low base metal prices, resulted in an increased exploration for and development of precious metal properties. Despite the reopening of some copper operations, however, production of byproduct silver from copper mining remained low in 1983. Production declined in 1984 due to low silver prices caused by the stagnant industrial demand for silver. The United States accounted for 10.4 percent of the world's mine production of silver in 1984 compared to 9.4 percent in 1980.

U.S. trade

U.S. imports.--Imports of silver metal-bearing materials declined from 9.4 million troy ounces ($179.4 million) in 1980 to 8.3 million troy ounces ($93.1 million) in 1981 before rising to 12.1 million troy ounces ($132.2 million) in 1983, reflecting increased industrial end-use demand for silver (table 55). In 1984, imports fell to 10.9 million troy ounces ($88.5 million). The principal supplying countries during 1980-84 were Peru, Canada, Chile, and Mexico. Transportation costs are an insignificant cost factor in the marketing of silver ores and metal-bearing materials. Estimated transportation costs associated with U.S. imports of the products covered averaged less than 1 percent of the customs value during 1980-84.

U.S. exports.--Exports of silver metal-bearing materials declined 85 percent from 307,488 troy ounces ($5.9 million) in 1980 to 46,906 troy ounces ($368,000) in 1982 before rising to 67,283 troy ounces ($554,000) in 1983 and to 650,415 troy ounces ($5.3 million) in 1984 (table 56). During 1980-83, less silver metal-bearing material was available for export as increased domestic production was consumed internally to satisfy increased demand, and the significant drop in prices depressed speculative interest in the foreign silver trade (usually an additional market source). The increase in the supply of silver ores and concentrates to be refined, which reflected an increase in silver prices, was the primary factor in higher U.S. silver exports for 1983. Exports increased dramatically in 1984 due to increased trading activity in U.S. futures markets and lower refining costs. The major export markets during 1980-84 were Belgium and Canada. Exports as a percentage of U.S. production reached a high of 2 percent in 1984. The U.S. trade deficit in silver ores and metal-bearing materials fell from $173.5 million in 1980 to $81.9 million in 1982. In 1983, the deficit increased to $131.7 million before declining to $83.1 million in 1984.

Table 54. 1/--Precious metal ores and metal-bearing materials--Silver: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in thousands of troy ounces; value in thousands of dollars; unit value per troy ounce)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	2/ 32,329	307	9,372	2/ 41,394	23
1981	40,683	213	8,279	48,749	17
1982	40,248	47	11,072	51,273	22
1983	43,415	67	12,132	55,480	22
1984	41,614	650	10,932	51,896	21
			Value		
1980	2/ 667,278	5,925	179,383	2/ 840,736	21
1981	427,922	1,510	93,103	519,515	18
1982	319,975	368	82,296	401,903	20
1983	496,671	554	132,209	628,326	21
1984	3/ 338,738	5,344	88,462	421,856	21
			Unit value		
1980	2/ $20.64	$19.27	$19.14	-	-
1981	10.52	7.08	11.25	-	-
1982	7.95	7.85	7.43	-	-
1983	11.44	8.24	10.90	-	-
1984	8.14	8.22	8.09	-	-

1/ Table 37 in the original summary.

2/ Revised.

3/ Estimated by the U.S. Bureau of Mines.

Source: Compiled from official statistics of the U.S. Department of Commerce and the U.S. Bureau of Mines.

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Table 55. 1/--Precious metal ores and metal bearing material - silver: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
			Quantity (troy ounces)		
Peru	6,594,269	2,844,093	5,544,500	8,457,603	7,267,349
Mexico	355,947	899,726	1,112,070	600,570	1,010,662
U King	787,713	616,341	774,356	351,838	692,603
Hondura	659,307	1,522,701	1,136,944	79,902	432,559
Brazil	73,844	109,195	222,643	166,045	390,837
Chile	146,786	652,177	799,605	534,533	384,065
Canada	511,229	681,488	1,014,107	1,343,728	317,733
Spain	0	0	0	0	138,732
All other	242,771	953,418	468,103	597,919	297,023
Total	9,371,866	8,279,139	11,072,328	12,132,138	10,931,563
			Value (1,000 dollars)		
Peru	120,241	35,044	43,241	93,068	60,917
Mexico	7,504	9,450	7,676	5,823	7,721
U King	16,289	6,842	5,489	3,917	5,196
Hondura	16,283	15,638	8,041	378	3,292
Brazil	1,775	1,549	1,766	1,714	3,219
Chile	2,445	7,611	5,103	5,959	2,929
Canada	8,394	7,865	7,629	14,670	2,123
Spain	-	-	-	-	1,157
All other	6,453	9,105	3,351	6,681	1,907
Total	179,383	93,103	82,296	132,209	88,462
			Unit value (per troy ounce) 2/		
Peru	-	-	-	-	-
Mexico	-	-	-	-	-
U King	-	-	-	-	-
Hondura	-	-	-	-	-
Brazil	-	-	-	-	-
Chile	-	-	-	-	-
Canada	-	-	-	-	-
Spain	-	-	-	-	-
All other	-	-	-	-	-
Average	19.14	11.25	7.43	10.90	8.09

1/ Table number 39 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 56. 1/--Precious metal ores and metal bearing material - silver: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (troy ounces)				
Belgium-----	6,400	6,400	0	735	354,899
Canada------	178,071	108,309	36,805	53,274	254,864
Nethlds-----	0	0	0	0	33,730
Switzld-----	6,851	0	0	0	4,622
Venez-------	0	0	0	0	2,000
Japan-------	41,226	0	0	0	300
Fr Germ-----	4,361	34,580	9,485	9,688	0
Panama------	0	0	0	2,478	0
All other---	70,579	63,979	616	1,108	0
Total---	307,488	213,268	46,906	67,283	650,415
	Value (1,000 dollars)				
Belgium-----	192	192	-	9	3,004
Canada------	3,084	849	314	383	2,011
Nethlds-----	-	-	-	-	246
Switzld-----	177	-	-	-	42
Venez-------	-	-	-	-	22
Japan-------	361	-	-	-	20
Fr Germ-----	96	70	53	125	-
Panama------	-	-	-	22	-
All other---	2,014	399	1	15	-
Total---	5,925	1,510	368	554	5,344
	Unit value (per troy ounce) 2/				
Belgium-----	-	-	-	-	-
Canada------	-	-	-	-	-
Nethlds-----	-	-	-	-	-
Switzld-----	-	-	-	-	-
Venez-------	-	-	-	-	-
Japan-------	-	-	-	-	-
Fr Germ-----	-	-	-	-	-
Panama------	-	-	-	-	-
All other---	-	-	-	-	-
Average--	19.27	7.08	7.85	8.24	8.22

1/ Table number 38 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Precious Metals - Platinum group metals (PGM's) (TSUS items 601.39-603.55)

U.S. industry

There was no domestic mine production of PGM ores during 1980-84. However, three firms produced PGM's as a byproduct of copper refining.

U.S. customs treatment

The rates of duty applicable to imports of PGM's covered by this supplement appear in table 57. The items eligible for preferential treatment under the GSP are also shown in this table. All items are eligible for duty-free treatment under the GSP. An excerpt from the TSUSA covering platinum group articles and an explanation of the various rates of duty are provided in appendix A.

U.S. consumption

Apparent consumption of PGM-bearing materials declined 95 percent, from 14,220 troy ounces ($3.9 million) in 1980 to 695 troy ounces ($587,000) in 1982 before rising to 14,967 troy ounces ($2.7 million) in 1984 (table 58). The decline in consumption of PGM-bearing materials during 1980-82 reflects reduced demand from the automotive, chemical, and petroleum industries that use the PGM's mainly as catalysts. Lower automotive production and a continuing trend toward smaller automobiles reduced the demand for PGM's in automobile exhaust converters, the single largest use for PGM's. Reduced gasoline consumption and the substitution of lower priced silver and gold by the electrical and petroleum refining industries also contributed to the decline. During 1983-84, demand improved slightly in the automotive, electrical, and petroleum refining industries, while demand by the medical and dental industries decreased. U.S. imports as a percent of consumption increased from 87 percent in 1980 to 91 percent in 1984, according to Government sources.

U.S. production

Mine production of PGM's rose from 3,348 troy ounces ($923,000) in 1980 to 8,033 troy ounces ($1.3 million) in 1982 before dropping 22 percent to 6,257 troy ounces ($1.1 million) in 1983 (table 58). U.S. production then rose to 14,635 troy ounces ($2.6 million) in 1984. U.S. mine production of PGM's is entirely a byproduct of copper production. Domestic mine production in 1980 was at the lowest level in nearly 50 years because of prolonged strikes in the copper industry. Increased domestic mine production in 1981 and 1982 represented a return to pre-strike levels following settlement of the 1980 copper strike. Domestic mine production of PGM's declined in 1983 primarily due to the reduced demand from the automotive, chemical, and petroleum industries. The 1984 upturn in industrial use resulted in increased production levels. The United States' resources of PGM's in 1984 are estimated at 300 million troy ounces, or 9.1 percent of the world total. The United States accounted for less than 1 percent of the world's mine production of PGM's in 1984, unchanged from the 1980 level.

Table 57.—Platinum group metals: U.S. rates of duty, by TSUS items

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rates of duty effective with respect to articles entered on or after Jan. 1—								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.39	Precious metal ores other precious metal content.	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
603.55A	Materials, other than the foregoing, containing, by weight, over 5 troy ounces of gold per short ton, or over 100 troy ounces of precious metals per short ton:	0.8¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.7¢/lb. on copper content + 0.66¢/lb. on lead content + 0.59¢/lb. on zinc content.	0.6¢/lb. on copper content + 0.56/lb. on lead content + 0.5¢/lb. on zinc content.	0.5¢/lb. on copper content + 0.47¢/lb. on lead content + 0.42¢/lb. on zinc content.	0.4¢/lb. on copper content + 0.37¢/lb. on lead content + 0.33¢/lb. on zinc content.	0.3¢/lb. on copper content + 0.28¢/lb. on lead content + 0.25¢/lb. on zinc content.	0.2¢/lb. on copper content + 0.17¢/lb. on lead content + 0.17 lb. on zinc content.	0.1¢/lb. on copper content + 0.09¢/lb. on lead content + 0.08¢ lb. on zinc content.	Free	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢ lb. on zinc content.

1/ The designation "A" indicates that the item is currently designated as an eligible article for duty-free treatment under the GSP and that all beneficiary developing countries are eligible for the GSP.

2/ Rate effective prior to Jan. 1, 1980.

3/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. trade

U.S. imports.--Imports of PGM-bearing materials declined from 13,669 troy ounces ($3.2 million) in 1980 to 1,532 troy ounces ($115,000) in 1982 before rising to 6,253 troy ounces ($1.3 million) in 1983. U.S. imports then fell to 332 troy ounces ($60,000) in 1984 (table 59). The substantial decline in imports was attributed to lower economic activity in the United States and abroad, resulting in reduced demand for PGM's less investor interest in platinum and other precious metals due to gold's high price level and decreased world production of PGM's owing to production declines in the Republic of South Africa and Canada (leading world producers). The principal supplying countries during 1980-84 were the Republic of South Africa, Canada, and Zimbabwe. Transportation costs are an insignificant cost factor in the marketing of platinum ores and metal-bearing materials. Estimated transportation costs associated with U.S. imports of the products covered averaged less than 1 percent of the customs value during 1980-84.

U.S. exports.--Exports of PGM-bearing materials increased annually during 1980-84, from 2,797 troy ounces ($218,000) in 1980 to 43,118 troy ounces ($3.9 million) in 1984 (table 60). The bulk of the export growth during 1980-84 was attributed to Japan, where the widespread popularity of platinum jewelry accounts for its single largest end use in the world. Japanese demand for platinum in jewelry, dentistry, and automobiles rose at the same time that Japan's major supplier, the Republic of South Africa, reduced production. The major export markets during 1980-84 were West Germany, Japan, and the United Kingdom. U.S. exports as a percentage of U.S. production exceeded 100 percent during 1981-84. The United States experienced a trade deficit of nearly $3.0 million in platinum ores and metal-bearing materials in 1980, which shifted to a trade surplus during 1981-84, rising to $3.9 million in 1984.

Table 58. 1/--Precious metal ores and metal-bearing materials--Platinum group metals: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in troy ounces; value in thousands of dollars; unit value per troy ounce)

Year	Production 2/	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption 3/
			Quantity		
1980	3,348	2,797	4/ 13,669	4/ 14,220	96
1981	7,318	8,246	3,005	2,077	145
1982	8,033	8,870	1,532	695	220
1983	6,257	31,827	6,253	5/ 12,510	50
1984	14,635	43,118	332	5/ 14,967	2
			Value		
1980	923	218	4/ 3,216	4/ 3,921	4/ 82
1981	1,571	1,030	207	748	28
1982	1,278	806	115	587	20
1983	1,133	4,014	1,328	5/ 2,461	54
1984	2,607	3,949	60	5/ 2,667	2
			Unit value		
1980	$275.69	$77.99	4/ $235.30	-	-
1981	214.68	124.89	68.93	-	-
1982	159.09	90.87	74.95	-	-
1983	181.08	126.11	212.39	-	-
1984	178.13	91.59	180.75	-	-

1/ Table 40 in the original summary.

2/ Received from platinum placers and as a byproduct of copper refining.

3/ The ratio of imports to consumption is overstated as a result of the inclusion of substantial reexports of foreign merchandise.

4/ Revised.

5/ Exports are believed to be primarily from refiner inventories, and are therefore excluded from 1983 and 1984 apparent consumption calculations.

Source: Compiled from official statistics of the U.S. Department of Commerce and the U.S. Bureau of Mines.

Table 59. 1/--Precious metal ores and metal bearing material - platinum: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (troy ounces)				
Belgium	0	0	0	0	267
Rep Saf	8,389	1,442	1,073	0	65
Canada	2,949	1,563	42	5,072	0
Zimbabw	0	0	117	1,168	0
Fr Germ	0	0	0	13	0
Guyana	0	0	300	0	0
Colomb	656	0	0	0	0
U King	1,101	0	0	0	0
All other	574	0	0	0	0
Total	13,669	3,005	1,532	6,253	332
	Value (1,000 dollars)				
Belgium	-	-	-	-	46
Rep Saf	2,318	14	22	-	14
Canada	133	193	10	1,030	-
Zimbabw	-	-	23	296	-
Fr Germ	-	-	-	2	-
Guyana	-	-	60	-	-
Colomb	464	-	-	-	-
U King	246	-	-	-	-
All other	56	-	-	-	-
Total	3,216	207	115	1,328	60
	Unit value (per troy ounce) 2/				
Belgium	-	-	-	-	-
Rep Saf	-	-	-	-	-
Canada	-	-	-	-	-
Zimbabw	-	-	-	-	-
Fr Germ	-	-	-	-	-
Guyana	-	-	-	-	-
Colomb	-	-	-	-	-
U King	-	-	-	-	-
All other	-	-	-	-	-
Average	235.30	68.93	74.95	212.39	180.75

1/ Table number 42 in the original summary

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 60. 1/--Precious metal ores and metal bearing material - platinum: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (troy ounces)				
Fr Germ	1,472	1,100	1,631	576	35,310
Japan	289	1,655	4,944	4,977	5,269
U King	387	677	968	14,103	1,326
Spain	0	200	233	300	94
Canada	344	190	148	924	425
Switzld	80	0	24	1,887	193
Nethlds	0	0	0	539	325
Brazil	0	217	35	36	108
All other	225	4,207	887	8,485	68
Total	2,797	8,246	8,870	31,827	43,118
	Value (1,000 dollars)				
Fr Germ	159	485	148	170	2,995
Japan	5	53	393	567	678
U King	10	65	125	1,893	121
Spain	-	103	89	100	71
Canada	33	19	26	196	48
Switzld	1	-	3	293	18
Nethlds	-	-	-	171	9
Brazil	-	7	1	3	5
All other	11	299	21	622	4
Total	218	1,030	806	4,014	3,949
	Unit value (per troy ounce) 2/				
Fr Germ	-	-	-	-	-
Japan	-	-	-	-	-
U King	-	-	-	-	-
Spain	-	-	-	-	-
Canada	-	-	-	-	-
Switzld	-	-	-	-	-
Nethlds	-	-	-	-	-
Brazil	-	-	-	-	-
All other	-	-	-	-	-
Average	77.99	124.89	90.87	126.11	91.59

1/ Table number 41 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Rare-Earth Ores (REO's) (TSUS items 601.12-601.45)

U.S. industry

As in 1980, there were two domestic mine producers of rare-earth minerals in 1984; one firm produced bastnaesite from its mine in California; the other firm recovered monazite as a byproduct of mineral sands mining for titanium and zirconium minerals in Florida. Industry mine and mill employment rose from 250 employees in 1980 to 270 employees in 1984.

U.S. customs treatment

The rates of duty applicable to imports of rare-earth ores covered by this supplement are shown in table 61. All items are eligible for duty-free treatment under the CBERA. An excerpt from the TSUSA covering rare-earth articles and an explanation of the various rates of duty are provided in appendix A.

Table 61.--Rare-earth ores: U.S. rates of duty, by TSUS items

TSUS item No.	Description	Pre-MTN col.1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--			
			1980	1981	1982	1983
601.12	Cerium ore------------------------	Free	2/	2/	2/	2/
601.45	Thorium (including monazite sand)--	Free	2/	2/	2/	2/

TSUS item No.	Description	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--Continued				Col. 2 rate of duty
		1984	1985	1986	1987	
601.12	Cerium ore------------------------	2/	2/	2/	2/	Free.
601.45	Thorium (including monazite sand)--	2/	2/	2/	2/	Free.

1/ Rate effective prior to Jan. 1, 1980.
2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Reported consumption of rare-earth ores increased from 20,900 short tons in 1980 to 23,148 short tons in 1981 as a result of the increased demand for high-strength permanent magnets made from rare-earth alloys, and the greater use of rare-earth ores in petroleum-cracking catalysts and in glass and ceramics (table 62). Consumption fell to 20,393 short tons in 1982. Because of the low demand for rare-earth ores for use as iron and steel alloying agents. Consumption recovered to an estimated 22,645 short tons in 1984 as traditional markets became stronger. The ratio of imports to consumption fluctuated during 1980-84, ranging from a low of 21 percent in 1983 to a high of 39 percent in 1982. Imports accounted for 28 percent of consumption in 1984.

U.S. production

Domestic production increased from 17,622 short tons in 1980 to 19,291 short tons in 1982 before decreasing to 18,831 short tons in 1983 (table 62). Production equaled an estimated 19,070 short tons in 1984. Production fluctuated during 1980-84 because of fluctuations in demand.

U.S. trade

U.S. imports.--U.S. imports increased from 5,674 short tons ($1.9 million) in 1980 to 8,233 short tons ($3.2 million) in 1981 before declining to 4,439 short tons ($1.5 million) in 1983 due to a sharp decline in cerium imports (table 63). Imports rose to 6,241 short tons ($2.2 million) in 1984 as domestic demand for rare earth ores in permanent magnets strengthened. Australia was the principal supplying country during 1980-84. Estimated transportation costs associated with U.S. imports of rare-earth ores averaged between 26 and 30 percent of the customs value during 1980-84 and are a significant factor in the marketing of thorium ore.

U.S. exports.--Exports of rare-earth ores decreased 46 percent from 10,050 short tons ($15.9 million) in 1980 to 5,432 short tons ($11.5 million) in 1982 as foreign demand weakened. Exports increased to 9,108 short tons ($16.6 million) in 1984 (table 64). U.S. exports as a percentage of U.S. production declined from 57 percent in 1980 to 30 percent in 1983 before rising to 48 percent in 1984. Japan was the leading importer of U.S. exports during 1980-84.

The U.S. trade surplus fluctuated during 1980-84 from a peak of $16.1 million in 1981 to a low of $8.3 million to in 1983. The trade surplus amounted to $14.4 million in 1984.

Table 62. 1/--Rare-earth ores: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in short tons, REO content; value in thousands of dollars; unit value per short ton, REO content)

Year	Production 2/	Exports	Imports	Reported consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	17,622	10,050	5,674	20,900	27
1981	18,829	10,711	8,233	23,148	36
1982	19,291	5,432	7,938	20,393	39
1983	18,831	5,626	4,439	21,164	21
1984	3/ 19,070	9,108	6,241	3/ 22,645	28
			Value		
1980	4/	15,871	1,853	4/	4/
1981	4/	19,254	3,158	4/	4/
1982	4/	11,451	3,070	4/	4/
1983	4/	9,815	1,517	4/	4/
1984	4/	16,558	2,202	4/	4/
			Unit value		
1980	-	$1,579.24	$326.58	-	-
1981	-	1,797.63	383.60	-	-
1982	-	2,108.06	386.75	-	-
1983	-	1,744.50	341.81	-	-
1984	-	1,817.93	352.89	-	-

1/ Table 43 in the original summary.
2/ Bastnaesite concentrates only.
3/ Estimated by the U.S. Bureau of Mines.
4/ Not available.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

Table 63. 1/--Rare-earth ores: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (short tons)				
Austral-----	5,438	8,233	7,274	4,106	6,185
Rep Saf-----	0	0	0	0	56
Malaysa-----	236	0	664	333	0
China t-----	0	0	0	0	0
Total---	5,674	8,233	7,938	4,439	6,241
	Value (1,000 dollars)				
Austral-----	1,749	3,158	2,830	1,395	2,156
Rep Saf-----	-	-	-	-	46
Malaysa-----	101	-	240	123	-
China t-----	3	-	-	-	-
Total---	1,853	3,158	3,070	1,517	2,202
	Unit value (per short ton) 2/				
Austral-----	-	-	-	-	-
Rep Saf-----	-	-	-	-	-
Malaysa-----	-	-	-	-	-
China t-----	-	-	-	-	-
Average--	326.58	383.60	386.75	341.81	352.89

1/ Table number 45 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 64. 1/ --Rare-earth ores: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (short tons)				
Japan	4,728	4,673	2,819	3,563	5,326
Austria	531	960	173	570	1,664
France	832	709	164	216	754
Fr Germ	2,551	3,022	1,174	446	300
U King	764	257	380	367	662
Italy	33	18	28	37	105
Belgium	0	0	0	0	63
China t	15	41	25	36	54
All other	596	1,031	669	391	180
Total	10,050	10,711	5,432	5,626	9,108
	Value (1,000 dollars)				
Japan	6,339	7,079	5,588	5,629	10,067
Austria	761	1,508	383	1,257	2,846
France	1,128	1,060	268	432	1,029
Fr Germ	3,759	5,584	2,643	952	949
U King	1,230	381	780	660	921
Italy	67	29	56	85	143
Belgium	-	-	-	-	130
China t	77	70	62	55	82
All other	2,510	3,543	1,670	744	390
Total	15,871	19,254	11,451	9,815	16,558
	Unit value (per short ton) 2/				
Japan	-	-	-	-	-
Austria	-	-	-	-	-
France	-	-	-	-	-
Fr Germ	-	-	-	-	-
U King	-	-	-	-	-
Italy	-	-	-	-	-
Belgium	-	-	-	-	-
China t	-	-	-	-	-
All other	-	-	-	-	-
Average	1,579.24	1,797.63	2,108.06	1,744.50	1,817.93

1/ Table number 44 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Tantalum (TSUS items 601.42-603.67)

U.S. industry and U.S. production

Tantalum was not produced in the United States during 1980-84. The United States has tantalum resources estimated at 3.4 million pounds, or less than 1 percent of the world's estimated tantalum resources.

Tantalum minerals are on the critical and strategic materials list and are stockpiled by the U.S. Government. In January 1984, the GSA agreed to purchase 50,000 pounds of contained tantalum as tantalum natural mineral concentrates for the national defense stockpile. The status of the stockpile, as of November 30, 1984, [1] is as follows (in thousands of pounds tantalum content):

Material	Goal	Total inventory	Authorized for disposal	Sales, 11 months
Minerals	8,400	1,432	-	-

U.S. customs treatment

The rates of duty applicable to imports of tantalum ore and metal bearing materials covered by this supplement are shown in table 65. An excerpt from the TSUSA covering tantalum articles and an explanation of the various rates of duty are provided in appendix A. All items are eligible for duty-free treatment under the CBERA.

U.S. consumption

Reported consumption of tantalum-bearing materials declined 58 percent from 1.9 million pounds in 1980 to an estimated 800,000 pounds in 1982 because of a reduced demand from the electronics and machine tool industries and due to the substitution of lower priced ceramic and aluminum for use in capacitors (table 66). Consumption increased to an estimated 1.0 million pounds in 1984 as continued economic recovery contributed to a stronger in the market for tantalum capacitors and cemented carbides. The ratio of imports to consumption ranged from 125 percent in 1980 to 343 percent in 1983. Imports accounted for 326 percent of apparent consumption in 1984.

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[1] FEMA and the U.S. Bureau of Mines.

Table 65.--Tantalum ore and metal-bearing materials: U.S. rates of duty, by TSUS items

(Percent ad valorem)

TSUS item No.	Description	Pre-MTN col.1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--			
			1980	1981	1982	1983
601.42	Tantalum ores----------------------	Free	2/	2/	2/	2/
603.67	Materials which are synthetic tantalum-columbium concentrates.	Free	2/	2/	2/	2/

TSUS item No.	Description	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--Continued				Col. 2 rate of duty
		1984	1985	1986	1987	
601.42	Tantalum ores----------------------	2/	2/	2/	2/	Free.
603.67	Materials which are synthetic tantalum-columbium concentrates.	2/	2/	2/	2/	30%.

1/ Rate effective prior to Jan. 1, 1980.

2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. trade

U.S. imports.--U.S. imports of tantalum metal-bearing materials increased from 2.3 million pounds ($73.8 million) in 1980 to 4.3 million pounds ($90.6 million) in 1981 before falling to 1.7 million pounds ($11.5 million) in 1983 due to declining demand by tantalum end-users (table 67). Imports increased to 3.3 million pounds ($25.9 million) in 1984 because of stonger end-use markets. Almost 60 percent of imported tantalum is used in tantalum capacitors. The principal sources of imports during 1980-84 were the Federal Republic of Germany and Australia. Australia's major tantalum producer had planned to develop a major new tin-tantalum mine in Australia in 1984.

The unit value of imported tantalum fell annually from $31.77 per pound in 1980 to $6.87 per pound in 1983 as relatively high tantalum prices in 1980 encouraged tantalum substitutes and increased efforts to locate and develop additional tantalum sources. The unit value rose to $7.95 per pound in 1984 as tantalum demand strengthened. Transportation costs are not a significant cost factor in the marketing of tantalum metal-bearing materials, accounting for less than an average 2 percent of the customs value during 1980-84.

U.S. exports.--As the United States is not a producer of tantalum ore, any exports are re exports of foreign merchandise (table 68). These tantalum-bearing materials represent past imports that were stockpiled by processors and dealers, but were never further processed or consumed.

The U.S. trade deficit fluctuated during 1980-84 from a peak of $90.4 million in 1981 to a low of $11.5 million in 1983. In 1984, the deficit equaled $25.9 million.

Table 66. 1/--Tantalum ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in thousands of pounds; value in thousands of dollars; (unit value per pound)

Year	Production	Exports 2/	Imports	Reported consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	0	426	3/ 2,322	3/ 1,863	3/ 125
1981	0	4	4,281	1,269	337
1982	0	8	2,741	4/ 800	343
1983	0	0	1,668	4/ 900	185
1984	0	0	3,256	4/ 1,000	326
			Value		
1980	0	12,894	73,774	5/	5/
1981	0	172	90,602	5/	5/
1982	0	506	28,527	5/	5/
1983	0	-	11,466	5/	5/
1984	0	-	25,900	5/	5/
			Unit value		
1980	-	$30.28	$31.77	-	-
1981	-	46.50	21.16	-	-
1982	-	62.49	10.41	-	-
1983	-	-	6.87	-	-
1984	-	-	7.95	-	-

1/ Table 46 in the original summary.

2/ Gross weight. Since there is no U.S. production of tantalum ore, exports are believed to be reexports of foreign merchandise.

3/ Revised.

4/ Estimated by the U.S. Bureau of Mines.

5/ Not available.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

Table 67. 1/--Tantalum ore and metal bearing material 2/: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (pounds)				
Fr Germ	321,922	2,428,369	1,371,754	960,387	1,222,781
Austral	383,118	268,330	160,909	182,465	410,722
Brazil	388,203	437,758	259,792	241,903	350,731
Thailnd	81,236	157,315	327,887	55,172	608,580
Malaysa	105,518	39,495	12,231	0	340,857
Rwanda	123,456	61,728	0	0	37,054
Nethlds	119,043	0	0	70,463	105,194
Spain	36,455	52,010	6,651	0	71,079
All other	763,303	835,891	601,498	157,815	109,370
Total	2,322,254	4,280,896	2,740,722	1,668,205	3,256,368
	Value (1,000 dollars)				
Fr Germ	8,800	35,874	12,234	6,957	8,744
Austral	17,955	9,688	2,243	1,543	5,187
Brazil	13,890	13,033	3,111	1,751	3,895
Thailnd	2,204	2,446	1,276	159	3,688
Malaysa	1,273	155	146	-	1,354
Rwanda	2,705	1,204	-	-	753
Nethlds	3,433	-	-	431	701
Spain	1,299	1,129	80	-	672
All other	22,216	27,072	9,438	625	906
Total	73,774	90,602	28,527	11,466	25,900
	Unit value (per pound) 3/				
Fr Germ	-	-	-	-	-
Austral	-	-	-	-	-
Brazil	-	-	-	-	-
Thailnd	-	-	-	-	-
Malaysa	-	-	-	-	-
Rwanda	-	-	-	-	-
Nethlds	-	-	-	-	-
Spain	-	-	-	-	-
All other	-	-	-	-	-
Average	31.77	21.16	10.41	6.87	7.95

1/ Table number 48 in the original summary.

2/ Excludes tantalum-bearing tin slags and synthetic columbium-tantalum concentrates.

3/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 68. 1/--Tantalum ore and metal bearing material: U.S. exports 2/ of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (pounds)				
Fr Germ	272,183	0	8,089	0	0
Nethlds	46,429	3,322	0	0	0
Italy	0	378	0	0	0
Japan	92,026	0	0	0	0
Sweden	10,671	0	0	0	0
U King	4,498	0	0	0	0
Total	425,807	3,700	8,089	0	0
	Value (1,000 dollars)				
Fr Germ	7,505	-	506	-	-
Nethlds	2,020	170	-	-	-
Italy	-	2	-	-	-
Japan	2,588	-	-	-	-
Sweden	521	-	-	-	-
U King	260	-	-	-	-
Total	12,894	172	506	-	-
	Unit value (per pound) 3/				
Fr Germ	-	-	-	-	-
Nethlds	-	-	-	-	-
Italy	-	-	-	-	-
Japan	-	-	-	-	-
Sweden	-	-	-	-	-
U King	-	-	-	-	-
Average	30.28	46.50	62.49	-	-

1/ Table number 47 in the original summary.

2/ Since there is no production of tantalum ore, these data should have been classified as reexports.

3/ Individual country unit values have been deleted as they are not representative of the involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Tin (TSUS item 601.48)

U.S. industry

In 1984, small quantities of tin concentrates were produced by only one mine in Alaska. In 1980, tin concentrates were produced by four companies as a byproduct of molybdenum mining in Colorado and from placer deposits in Alaska and New Mexico. Industry mine and primary smelter employment declined to approximately 200 people in 1984 from 400 employed in 1980. The decline in the U.S. tin ore industry between 1980 and 1984 is attributable to low tin prices and increased competition from tin substitutes.

U.S. customs treatment

The rates of duty applicable to imports of tin ore and metal-bearing materials covered by this supplement are shown in table 69. An excerpt from the TSUSA covering tin articles and an explanation of the various rates of duty are provided in appendix A. Imports of tin ore are eligible for duty-free treatment under the CBERA.

Table 69.--Tin ore and metal-bearing materials: U.S. rates of duty, by TSUS items

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--			
			1980	1981	1982	1983
601.48	Tin ore and black oxide of tin-----	Free	2/	2/	2/	2/

TSUS item No.	Description	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--Continued				Col. 2 rate of duty
		1984	1985	1986	1987	
601.48	Tin ore and black oxide of tin-----	2/	2/	2/	2/	Free.

1/ Rate effective prior to Jan. 1, 1980.

2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Consumption of tin ore and metal-bearing materials fluctuated during 1980-84 from a low of 232 metric tons in 1981 to a high of 3,271 metric tons in 1984 (table 70). Tin has been subject to increased competitive pressures from aluminum, plastics, and tin-free steels for use in cans and containers. Consumption rose to its highest level in 1984 because of low tin prices relative to prices of substitutes. The ratio of imports to apparent consumption increased from 81 percent in 1980 to approximately 100 percent during 1981-84.

U.S. production

In 1980, an estimated 200 metric tons of tin ore were produced (table 70). Domestic production during 1981-84 was withheld to avoid disclosure of company confidential data, but total output amounted to only a small fraction of apparent consumption. Domestic deposits of tin are negligible, amounting to 220,000 metric tons, or less than 1 percent of the world's estimated tin deposits.

U.S. trade

U.S. imports.--U.S. imports of tin ore and metal-bearing materials fluctuated during 1980-84, declining from 840 metric tons ($11.1 million) in 1980 to 232 metric tons ($3.0 million) in 1981 before rising to 1,961 metric tons ($21.5 million) in 1982 (table 71). U.S. imports fell again in 1983 to 969 metric tons ($9.5 million) before rising to 3,271 metric tons ($20.9 million) in 1984 as imports from Peru increased considerably. Limited demand and oversupply of tin in world markets during this period contributed to the decline in the world price of tin. The unit value per metric ton of tin metal-bearing material imported declined from $13,201.86 in 1980 to $6,378.02 in 1984. The principal foreign sources of tin during 1980-84 were Peru and Bolivia. Transportation costs are not a significant factor in the marketing of tin ore and metal-bearing materials. Estimated transportation costs associated with U.S. imports of the products covered averaged less than 3 percent of the customs value during 1980-84.

U.S. exports

U.S. exports.--Exports of tin ore and metal-bearing materials are unknown because they are not separately reported in official U.S. statistics. Exports during 1980-84 are, however, considered to be negligible.

Table 70. 1/--Tin ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in metric tons; value in thousands of dollars; (unit value per metric ton)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	2/ 200	4/	840	1,040	81
1981	3/	4/	232	5/ 232	5/ 100
1982	3/	4/	1,961	5/ 1,961	5/ 100
1983	3/	4/	969	5/ 969	5/ 100
1984	3/	4/	3,271	5/ 3,271	5/ 100
			Value		
1980	6/	4/	11,090	6/	6/
1981	6/	4/	2,975	6/	6/
1982	6/	4/	21,545	6/	6/
1983	6/	4/	9,549	6/	6/
1984	6/	4/	20,862	6/	6/
			Unit value		
1980	-	-	$13,201.86	-	-
1981	-	-	12,823.79	-	-
1982	-	-	10,986.56	-	-
1983	-	-	9,854.34	-	-
1984	-	-	6,378.02	-	-

1/ Table 49 in the original summary.

2/ Estimated by the U.S. Bureau of Mines.

3/ Production is withheld to avoid disclosure of individual company confidential data.

4/ Exports are not separately reported in official U.S. statistics but are considered to be negligible.

5/ Estimated by the staff of the U.S. International Trade Commission.

6/ Not available.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce, except as noted.

Table 71. 1/ --Tin ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (metric tons)				
Peru----------	0	232	1,416	341	2,501
Thailnd------	146	0	0	101	403
Bolivia------	528	0	192	257	271
Singapr------	0	0	0	0	46
Zaire--------	0	0	22	0	29
Mexico-------	1	0	0	0	17
Rep Saf------	125	0	144	270	3
Canada-------	13	0	187	0	1
All other----	27	0	0	0	0
Total---	840	232	1,961	969	3,271
	Value (1,000 dollars)				
Peru----------	-	2,975	17,473	3,474	14,308
Thailnd------	1,585	-	-	887	3,883
Bolivia------	7,505	-	1,817	2,812	1,782
Singapr------	-	-	-	-	475
Zaire--------	-	-	226	-	306
Mexico-------	2	-	-	-	78
Rep Saf------	1,536	-	1,183	2,376	28
Canada-------	85	-	845	-	1
All other----	376	-	-	-	-
Total---	11,090	2,975	21,545	9,549	20,862
	Unit value (per unit) 2/				
Peru----------	-	-	-	-	-
Thailnd------	-	-	-	-	-
Bolivia------	-	-	-	-	-
Singapr------	-	-	-	-	-
Zaire--------	-	-	-	-	-
Mexico-------	-	-	-	-	-
Rep Saf------	-	-	-	-	-
Canada-------	-	-	-	-	-
All other----	-	-	-	-	-
Average--	13,201.86	12,823.79	10,986.56	9,854.34	6,378.02

1/ Table number 50 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Titanium (TSUS items 601.51-603.62)

U.S. industry

Ilmenite concentrate, the principal source of titanium, was produced in 1984 by two firms at three mines in Florida. By 1980, there were four firms operating five mines in New York, Florida, and New Jersey. One firm ceased operations in 1982 citing high production costs and another firm suspended production in 1984. Rutile, another source of titanium, was produced at one Florida mine during 1980-84. The mine and mill industry employed approximately 750 people in 1984 compared to 1,060 1/ people in 1980.

U.S. customs treatment

The rates of duty applicable to imports of titanium ore and metal-bearing materials covered by this supplement are shown in table 72. Imports of synthetic rutile are eligible for duty-free treatment under the CBERA. The items eligible for preferential GSP are shown in the following table. An excerpt from the TSUSA covering titanium articles and an explanation of the various rates of duty are provided in appendix A.

1/ Revised.

Table 72.--Titanium ore and metal-bearing materials: U.S. rates of duty by TSUS and TSUSA items

(Percent ad valorem)

TSUS and TSUSA item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
	Titanium ore:										
601.5120	Ilmenite and ilmenite sand------	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
601.5140	Rutile and rutile sand----------	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
603.6200	Materials which consist of slag, containing by weight over 40% titanium, not treated for recovery of cu, pb, zn.	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
603.7010A	Synthetic rutile------------------	7.5%	7.2%	6.9%	6.6%	6.3%	5.9%	5.6%	5.3%	5%	30%.

1/ The designation "A" indicates that the item is currently designated as an eligible article for duty-free treatment under the GSP and that all beneficiary developing countries are eligible for the GSP.

2/ Rate effective prior to Jan. 1, 1980.

3/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Reported consumption of ilmenite concentrates, titanium slags, and rutile concentrates declined 23 percent from 1.3 million short tons in 1980 ($118.7 million) to 1.0 million short tons ($99.4 million) in 1982, before rising to an estimated 1.2 million short tons in 1983 and 1984 (table 73). Consumption fell during 1980-82 due to declines in the homebuilding and commercial aircraft markets, and rose in 1983 and 1984 with the recovery in these markets. The ratio of imports to consumption fluctuated between 44 and 73 percent during 1980-84, reaching 65 percent in 1984.

U.S. production

Mine production of titanium metal-bearing materials decreased 53 percent from 557,000 short tons ($32.0 million) in 1980 to 263,000 short tons ($19.1 million) in 1982 due to declining demand, the permanent closing of one mine, and the temporary closing of two other mines (table 73). Production also was affected adversely by the large inventory levels that accumulated during the peak production years of 1979 and 1980. Mine production figures in 1983 and 1984 were withheld to avoid disclosure of company confidential data, but is believed to have increased in response to the increased demand for these materials and the reopening of mines closed in 1982. There were no changes in the U.S. Government stockpile for rutile during 1980-84.

U.S. trade

U.S. imports.--U.S. imports of titanium metal-bearing materials decreased erratically from 844,273 short tons ($90.1 million) in 1980 to 511,736 short tons ($53.1 million) in 1983 due to declining demand by U.S. end users (table 74). Imports increased to 801,919 short tons ($88.8 million) in 1984. The principal sources during 1980-84 were Australia and Canada.

Imports of synthetic rutile under the duty-free provisions of the GSP accounted for less than 2 percent of total imports each year during 1980-84. The principal source of these GSP imports was Taiwan. There were no imports of titanium ore and metal-bearing materials under the CBERA in 1984. Transportation costs are considered a significant factor in the marketing of titanium ore and metal-bearing materials. Transportation costs associated with U.S. imports of the products covered averaged 14 percent of the customs value during 1980-84.

U.S. exports.--Exports of titanium metal-bearing materials decreased from 17,831 short tons ($3.4 million) in 1980 to 7,297 short tons ($2.1 million) in 1981, before recovering to 21,681 short tons ($1.3 million) in 1982 (table 75). U.S. exports declined to 4,393 short tons ($1.0 million) in 1983 before increasing to 8,652 short tons ($1.9 million) in 1984. Exports during 1980-84 fluctuated in unison with the foreign demand for titanium. Exports as a percentage of domestic production did not exceed 8 percent during 1980-82. This ratio was not available in 1983 and 1984. Mexico and Canada were the principal foreign markets during 1980-84. The U.S. trade deficit in titanium ore and metal-bearing materials rose from $86.7 million in 1980 to $93.6 million in 1981 before declining to $52.1 million in 1983. The deficit then rose to $86.9 million in 1984.

Table 73. 1/--Titanium ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in thousands of short tons; value in thousands of dollars; unit (value per short ton)

Year	Production	Exports	Imports	Reported consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	2/ 557	18	844	2/ 1,328	2/ 64
1981	542	7	720	1,394	52
1982	263	22	767	1,048	73
1983	3/	4	512	1,163	44
1984	3/	9	802	4/ 1,225	65
			Value		
1980	32,041	3,444	90,131	118,728	76
1981	37,013	2,099	95,748	130,662	73
1982	19,093	1,280	81,576	99,389	82
1983	5/	1,006	53,062	5/	5/
1984	5/	1,936	88,833	5/	5/
			Unit value		
1980	$57.52	$193.14	$106.76	-	-
1981	68.29	287.70	133.04	-	-
1982	72.60	59.02	106.42	-	-
1983	-	229.01	103.69	-	-
1984	-	223.74	110.78	-	-

1/ Table 51 in the original summary.

2/ Revised.

3/ Production is withheld to avoid the disclosure of individual company confidential data.

4/ Estimated by the U.S. Bureau of Mines.

5/ Not available.

Source: Compiled from official statistics of the U.S Bureau of Mines and the U.S. Department of Commerce.

Table 74. 1/--Titanium ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (short tons)				
Austral	542,677	338,873	439,525	350,542	525,519
Canada	155,660	258,411	208,164	129,815	162,340
Rep Saf	68,426	93,833	57,005	21,833	65,624
Sier Ln	40,900	25,236	53,308	0	37,972
Denmark	0	0	0	0	10,464
China t	238	0	0	8,723	0
Japan	6,590	1,200	1,560	617	0
France	0	0	0	127	0
All other	29,782	2,136	6,970	79	0
Total	844,273	719,689	766,532	511,736	801,919
	Value (1,000 dollars)				
Austral	45,271	42,944	32,045	27,479	39,919
Canada	14,722	27,836	25,244	18,640	25,212
Rep Saf	10,921	15,313	9,779	4,993	10,376
Sier Ln	9,515	6,983	13,200	-	10,288
Denmark	-	-	-	-	3,038
China t	69	-	-	1,583	-
Japan	2,077	492	604	235	-
France	-	-	-	111	-
All other	7,556	2,180	704	21	-
Total	90,131	95,748	81,576	53,062	88,833
	Unit value (per short ton) 2/				
Austral	-	-	-	-	-
Canada	-	-	-	-	-
Rep Saf	-	-	-	-	-
Sier Ln	-	-	-	-	-
Denmark	-	-	-	-	-
China t	-	-	-	-	-
Japan	-	-	-	-	-
France	-	-	-	-	-
All other	-	-	-	-	-
Average	106.76	133.04	106.42	103.69	110.78

1/ Table number 53 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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table 75. 1/--Titanium ore and metal bearing material: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (short tons)				
Mexico------	12,605	2,112	685	2,318	2,916
Canada------	4,042	4,145	1,329	1,956	4,498
Arab Em-----	0	0	0	0	1,100
Colomb------	4	49	40	11	61
Sweden------	159	159	90	0	46
Fr Germ-----	0	0	18,069	0	17
Chile-------	0	0	0	6	5
Austral-----	29	12	10	4	9
All other---	992	820	1,458	98	0
Total---	17,831	7,297	21,681	4,393	8,652
	Value (1,000 dollars)				
Mexico------	1,988	578	179	621	1,246
Canada------	1,138	1,120	367	348	607
Arab Em-----	-	-	-	-	39
Colomb------	1	13	11	4	22
Sweden------	42	50	23	-	12
Fr Germ-----	-	-	590	-	6
Chile-------	-	-	-	5	3
Austral-----	8	3	6	1	2
All other---	268	335	103	27	-
Total---	3,444	2,099	1,280	1,006	1,936
	Unit value (per short ton) 2/				
Mexico------	-	-	-	-	-
Canada------	-	-	-	-	-
Arab Em-----	-	-	-	-	-
Colomb------	-	-	-	-	-
Sweden------	-	-	-	-	-
Fr Germ-----	-	-	-	-	-
Chile-------	-	-	-	-	-
Austral-----	-	-	-	-	-
All other---	-	-	-	-	-
Average--	193.14	287.70	59.02	229.01	223.74

1/ Table number 52 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Tungsten (TSUS items 601.54-603.45)

U.S. industry

The tungsten industry is highly concentrated, and most companies are vertically integrated. In 1984, about 95 percent of the domestic concentrate production came from three mines in California and Colorado. Most of the five major mines were operated at below capacity or were temporarily closed primarily due to low concentrate prices, excess world suppliers, and slow foreign market growth. One mine in California operated at full capacity, but was closed during the winter months due to weather conditions. In 1984, production began at a mine in California. The employment of the mines and mills dropped from 880 persons in 1980 to an estimated 300 persons in 1984. 1/

U.S. customs treatment

The rates of duty applicable to imports of tungsten ores and metal-bearing materials covered by this supplement appear in table 76. An excerpt from the TSUSA covering tungsten ores and metal-bearing materials and an explanation of the various rates of duty are provided in appendix A. All items are eligible for duty-free treatment under the CBERA.

1/ U.S. Bureau of Mines, Mineral Commodity Summaries 1985.

Table 76.--Tungsten: U.S. rates of duty, by TSUS item

(Cents per pound on tungsten content percent ad valorem)

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--			
			1980	1981	1982	1983
601.54	Tungsten ore	25¢	17¢	17¢	17¢	17¢
603.45	Materials in chiefs value of tungsten.	21¢ + 10%	16¢ + 7.6%	11¢ + 5.2%	10¢ + 4.8%	10¢ + 4.8%

TSUS item No.	Description	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--Continued				Col. 2 rate of duty
		1984	1985	1986	1987	
601.54	Tungsten ore	17¢	17¢	17¢	17¢	50¢.
603.45	Materials in chief value of tungsten.	10¢ + 4.8%	10¢ + 4.8%	10¢ + 4.8%	10¢ + 4.8%	60¢ + 40%.

1/ Rate effective prior to Jan. 1, 1980.

U.S. consumption

In 1984, reported domestic consumption of tungsten ore and metal-bearing materials was 18.9 million pounds, up 91 percent from the 9.9 million pounds consumed in 1982 (table 77). Consumption in 1982 was less than half the annual consumption levels during 1979-1981, and was at the lowest level since 1959. Low consumption in 1982 and 1983 was due to reduced demand for most tungsten primary products with the exception of those in superalloys and mill products. Consumption recovered in 1984 as production of ammonium paratungstate (APT), the principal intermediate tungsten product, rose above prerecession levels. Imports accounted for 67.7 percent of domestic consumption in 1984, down from 78.3 percent in 1982, and somewhat higher than the market shares during 1979-81.

U.S. shipments

After increasing from 6.0 million pounds of contained tungsten ($50.6 million) in 1980 to 7.8 million pounds in ($62.2 million) in 1981, domestic mine shipments decreased for 2 consecutive years, and increased in 1984 to 2.6 million pounds ($13.0 million) (table 77). The 1983 level, 2.2 million pounds ($10.5 million), was the lowest since 1934. Shipments were at low levels because most of the mines operated below capacity or were closed temporarily because concentrate market prices were below production costs. Mine capacity utilization was 26 percent in 1984.

The United States has a resource base currently estimated at 290 million pounds of contained tungsten, or 8.0 percent of the world total. Almost 55 percent of the world's tungsten resources are located in China. The United States accounted for 3.0 percent of the world's mine production in 1984, compared with 5.3 percent in 1980.

Tungsten ore and concentrate is on the critical and stategic materials list and is stockpiled by the U.S. Government. The GSA continued to offer excess tungsten concentrate for sale during 1981-84. The status of the stockpile for 1980-84 is as follows: 1/

Material 1/	1980	1981	1982	1983	1984
	--Thousands of pounds of tungsten content--				
Goal	8,823	55,450	55,450	55,450	55,450
Total inventory (Dec. 31)	89,209	87,098	86,340	85,767	82,036
Shipments from Government stocks	3,755	2,111	759	571	3,731

1/ Includes National Stockpile and Defense Production Act holdings of stockpile and nonstockpile grades of tungsten concentrate.

U.S. trade

U.S. imports.--Imports of tungsten ore and metal-bearing materials increased from 11.5 million pounds of contained tungsten ($88.6 million) in 1980 to 11.8 million pounds ($91.3 million) in 1981, decreased in the 2 subsequent years to 6.3 million pounds ($25.7 million) in 1983, and then increased to 12.8 million pounds ($51.7 million) in 1984 (table 78). Imports declined during 1982-83 as a result of the weak domestic market. Imports increased in 1984 as domestic demand for tungsten in end uses could not be met by domestic production. Low mine production levels and unavailability of concentrate for the processing industry (most mining companies captively consumed concentrate in the production of APT) increased the United States reliance on imports. The principal supplying countries in 1984 were Bolivia and Canada. Imports from China, which had been high in earlier years, decreased during 1982-84, as that country began exporting more further-processed materials such as APT to the United States. In 1984, 70 percent of the imports of tungsten ore and metal-bearing materials entered United States free of duty under the GSP. Transportation costs associated with U.S. imports accounted for about 2 percent of the customs value during 1980-84.

U.S. exports.--Exports of tungsten ore and metal-bearing material fell from 2.0 million pounds of contained tungsten ($15.5 million) in 1980 to 2,005 pounds ($11,000) in 1983, and then increased to 284,477 pounds ($1.2 million) in 1984 (table 79). Most exports of tungsten ore and concentrate are shipments from the Government stockpile. The largest foreign market during 1980-84 was West Germany. The United States had a trade deficit of 12.5 million pounds ($50.5 million) in 1984.

1/ FEMA and the U.S. Bureau of Mines.

Table 77. 1/--Tungsten ore and metal bearing materials: U.S. mine shipments, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in thousands of pounds, contained tungsten; value in thousands of dollars; unit value per pound, contained tungsten)

Year	Shipments 2/	Exports	Imports	Reported consumption	Ratio (percent) of imports to consumption
	Quantity				
1980	6,036	2,029	11,484	20,432	56.2
1981	7,815	175	11,771	21,692	54.3
1982	3,472	672	7,781	9,935	78.3
1983	2,240	2	6,320	11,422	55.3
1984	2,586	284	12,806	18,910	67.7
	Value				
1980	50,575	15,454	88,622	3/	3/
1981	62,231	1,150	91,327	3/	3/
1982	22,062	3,387	46,765	3/	3/
1983	10,528	11	25,743	3/	3/
1984	13,000	1,240	51,715	3/	3/
	Unit value				
1980	$8.33	$7.62	$7.72	-	-
1981	7.83	6.56	7.76	-	-
1982	6.58	5.04	6.01	-	-
1983	4.87	5.30	4.07	-	-
1984	5.03	4.36	4.04	-	-

1/ Table 54 in the original summary.

2/ Revised from original summary.

3/ Not available.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

Table 78. 1/--Tungsten ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (pounds, contained weight)				
Bolivia-----	2,593,264	2,510,749	1,418,262	1,459,401	2,870,557
Canada------	2,915,585	2,004,913	2,775,280	1,431,774	3,226,967
Thailnd-----	1,045,670	705,626	294,710	313,407	1,705,918
Portugl-----	575,930	1,027,920	504,266	746,987	1,335,107
Peru--------	525,140	651,904	251,807	437,570	1,333,925
Burma-------	0	271,809	126,943	444,005	751,113
Mexico------	515,024	616,225	542,316	474,717	432,088
Brazil------	63,295	443,891	545,385	171,283	329,382
All other---	3,250,384	3,537,957	1,322,160	841,059	820,669
Total---	11,484,292	11,770,994	7,781,129	6,320,203	12,805,726
	Value (1,000 dollars)				
Bolivia-----	20,236	19,724	8,511	6,298	12,694
Canada------	22,955	15,225	15,003	6,290	12,645
Thailnd-----	8,223	5,543	2,037	1,197	7,038
Portugl-----	4,321	8,159	3,365	3,524	5,504
Peru--------	4,047	4,787	1,618	1,610	5,258
Burma-------	-	2,080	635	1,401	2,545
Mexico------	2,549	3,655	2,340	1,698	1,610
Brazil------	503	3,546	3,516	658	1,309
All other---	25,788	28,608	9,740	3,067	3,112
Total---	88,622	91,327	46,765	25,743	51,715
	Unit value (per pound, contained weight)				
Bolivia-----	$7.80	$7.86	$6.00	$4.32	$4.42
Canada------	7.87	7.59	5.41	4.39	3.92
Thailnd-----	7.86	7.86	6.91	3.82	4.13
Portugl-----	7.50	7.94	6.67	4.72	4.12
Peru--------	7.71	7.34	6.43	3.68	3.94
Burma-------	-	7.65	5.00	3.16	3.39
Mexico------	4.95	5.93	4.31	3.58	3.73
Brazil------	7.94	7.99	6.45	3.84	3.97
All other---	7.93	8.09	7.37	3.65	3.79
Average--	7.72	7.76	6.01	4.07	4.04

1/ Table number 55 in the original summary.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 79. 1/—Tungsten ore and metal bearing material: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (pounds, contained weight)				
Fr Germ	1,262,748	92,835	495,370	1,450	106,620
Austria	0	0	0	0	63,270
Brazil	54,557	0	0	0	54,894
Mexico	0	0	0	0	46,233
France	0	0	0	0	13,248
Ireland	0	0	0	0	212
Canada	0	9,936	9,887	483	0
S Arab	0	0	0	72	0
All other	711,518	72,458	167,026	0	0
Total	2,028,823	175,229	672,283	2,005	284,477
	Value (1,000 dollars)				
Fr Germ	10,064	482	2,672	7	571
Austria	-	-	-	-	279
Brazil	551	-	-	-	161
Mexico	-	-	-	-	133
France	-	-	-	-	93
Ireland	-	-	-	-	3
Canada	-	60	72	3	-
S Arab	-	-	-	1	-
All other	4,839	608	644	-	-
Total	15,454	1,150	3,387	11	1,240
	Unit value (per pound, contained weight)				
Fr Germ	$7.97	$5.19	$5.39	$4.65	$5.36
Austria	-	-	-	-	4.41
Brazil	10.10	-	-	-	2.93
Mexico	-	-	-	-	2.87
France	-	-	-	-	7.00
Ireland	-	-	-	-	15.43
Canada	-	6.04	7.28	7.00	-
S Arab	-	-	-	7.01	-
All other	6.80	8.39	3.85	-	-
Average	7.62	6.56	5.04	5.30	4.36

1/ Table number 56 in the original summary.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Vanadium (TSUS items 601.60-603.65)

U.S. industry

During 1980-84, vanadium concentrates as uranium coproducts or byproducts were mined by one firm with operations in Colorado and by one firm with a single operation in Utah. Another firm that mined vanadium concentrates as a uranium byproduct in Utah ceased operations in 1980. A single firm, with its mine located in Arkansas, mined vanadium ore directly during 1980-84. During 1980-84, Colorado and Utah were the leading States producing vanadium ore. Mine and mill employment declined to 800 in 1984 compared with 1,800 in 1980 due to depressed conditions in the U.S. steel industry.

U.S. customs treatment

The rates of duty applicable to imports of vanadium ore and metal-bearing materials covered by this supplement are shown in table 80. An excerpt from the TSUSA covering vanadium articles and an explanation of the various rates of duty are provided in appendix A. All items are eligible for duty-free treatment under the CBERA.

Table 80.--Vanadium: U.S. rates of duty, by TSUS and TSUSA items

TSUS and TSUSA item Nos.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.6000	Vanadium ore	Free	2/	2/	2/	2/	2/	2/	2/	2/	Free.
603.6510	Vanadium bearing materials	Free	2/	2/	2/	2/	2/	2/	2/	2/	Free.

1/ Rate effective prior to Jan. 1, 1980.

2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

U.S. consumption of vanadium ore and metal-bearing materials decreased 77 percent from 9,563 short tons ($73.4 million) in 1980 to 2,159 short tons ($30.4 million) in 1983 before rising to 3,922 short tons in 1984 (table 81). Consumption declined during 1980-83 due to the weak demand for ferrovanadium by the U.S. steel industry (in particular, ferrovanadium used in the production of oil country tubular goods and alloy steels), and advanced in 1984 with the recovery of the steel industry. The ratio of imports to consumption rose to 29 percent in 1984 after declining from 51 percent in 1980 to 5 percent in 1983.

U.S. production

Mine production increased from 4,806 short tons ($64.4 million) in 1980 to 5,126 short tons ($71.5 million) in 1981 before declining to 2,171 short tons ($30.7 million) in 1983 (table 81) as U.S. producers cut back mining operations due to the weak demand. Production recovered to an estimated 2,800 short tons in 1984 as consumption by principal end-use markets increased. Beginning in 1982, the U.S. vanadium industry underwent major restructuring prompted by weak demand for ferrovanadium by the U.S. steel industry and weak demand for co-product uranium. The industry made an effort to lessen dependence on the struggling iron and steel industry by developing new end-use markets, such as the automotive market, for its product. The United States has vanadium resources currently estimated at 30 million short tons, or 43.5 percent of the world's estimated resources. The United State accounted for 9 percent of the world's mine production of vanadium in 1984 compared with 12.5 percent in 1980.

U.S. trade

U.S. imports.--U.S. imports of vanadium metal-bearing materials decreased from 4,838 short tons ($9.5 million) in 1980 to 103 short tons ($86,000) in 1983 before rising to 1,144 short tons ($549,000) in 1984 as the steel industry ferrovanadium consumption recovered from itsdepressed 1981-83 levels (table 82). The principal source of imports during 1980-84 was the Republic of South Africa. Imports from South Africa have fallen significantly from peak 1980 levels due to weak ferrovanadium demand. Transportation costs associated with imports of the products covered averaged less than 10 percent of the customs value during 1980-84.

U.S. exports.--Exports of vanadium metal-bearing materials increased from 81 short tons ($517,000) in 1980 to 115 short tons ($333,000) in 1983, and then declined to 22 short tons ($109,000) in 1984 (table 83). The principal export market during 1980-84 was the Federal Republic of Germany. The U.S. trade balance rose from a deficit of $9.0 million in 1980 to $11.2 million in 1981 before a trade surplus of $247,000 was registered in 1983. In 1984, the trade deficit amounted to $440,000.

Table 81. 1/--Vanadium ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in short tons, contained vanadium; value in thousands of dollars; unit value per short ton, contained vanadium)

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1980	4,806	81	4,838	9,563	51
1981	5,126	99	4,382	9,409	47
1982	4,098	101	1,985	5,982	33
1983	2,171	115	103	2,159	5
1984	2/ 2,800	22	1,144	2/ 3,922	29
	Value				
1980	64,370	517	9,535	73,388	13
1981	71,496	575	11,751	82,672	14
1982	52,577	626	5,194	57,145	9
1983	30,675	333	86	30,428	4/
1984	3/	109	549	3/	3/
	Unit value				
1980	$13,393.67	$6,378.60	$1,970.94	-	-
1981	13,947.72	5,805.14	2,681.76	-	-
1982	12,829.92	6,199.37	2,616.56	-	-
1983	14,129.43	2,894.78	833.51	-	-
1984	3/	4,950.00	480.21	-	-

1/ Table 57 in the original summary.
2/ Estimated by the U.S. Bureau of Mines.
3/ Not available.
4/ Less than 0.5 percent.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

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Table 82. 1/--Vanadium ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (short tons, contained weight)				
Rep Saf	4,317	3,010	988	0	914
N Antil	225	159	123	103	153
Venez	180	208	261	0	42
Italy	0	289	307	0	26
Jamaica	0	7	0	0	9
Israel	0	118	96	0	0
Dom Rep	47	113	94	0	0
U King	0	30	47	0	0
All other	69	448	69	0	0
Total	4,838	4,382	1,985	103	1,144
	Value (1,000 dollars)				
Rep Saf	8,570	9,209	3,024	-	434
N Antil	609	460	364	86	51
Venez	166	218	694	-	38
Italy	-	484	586	-	23
Jamaica	-	16	-	-	4
Israel	-	210	178	-	-
Dom Rep	71	216	108	-	-
U King	-	74	87	-	-
All other	121	866	152	-	-
Total	9,535	11,751	5,194	86	549
	Unit value (per short ton, contained weight) 2/				
Rep Saf	-	-	-	-	-
N Antil	-	-	-	-	-
Venez	-	-	-	-	-
Italy	-	-	-	-	-
Jamaica	-	-	-	-	-
Israel	-	-	-	-	-
Dom Rep	-	-	-	-	-
U King	-	-	-	-	-
All other	-	-	-	-	-
Average	1,970.94	2,681.76	2,616.56	833.51	480.21

1/ Table number 59 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to groupings of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 83. 1/--Vanadium ore and metal bearing material: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (short tons, contained weight)				
Belgium	10	0	0	0	22
Nethlds	0	0	0	50	0
Fr Germ	0	0	81	54	0
N Antil	0	0	0	11	0
Indnsia	0	0	0	0	0
Mexico	61	69	20	0	0
Japan	5	30	0	0	0
Canada	5	0	0	0	0
Total	81	99	101	115	22
	Value (1,000 dollars)				
Belgium	66	-	-	-	109
Nethlds	-	-	-	159	-
Fr Germ	-	-	506	114	-
N Antil	-	-	-	54	-
Indnsia	-	-	-	5	-
Mexico	377	417	120	-	-
Japan	33	157	-	-	-
Canada	40	-	-	-	-
Total	517	575	626	333	109
	Unit value (per short ton, contained weight) 2/				
Belgium	-	-	-	-	-
Nethlds	-	-	-	-	-
Fr Germ	-	-	-	-	-
N Antil	-	-	-	-	-
Indnsia	-	-	-	-	-
Mexico	-	-	-	-	-
Japan	-	-	-	-	-
Canada	-	-	-	-	-
Average	6,378.60	5,805.14	6,199.37	2,894.78	4,950.00

1/ Table number 58 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Zinc (TSUS items 601.66-603.55)

U.S. industry

During 1980-84, twenty-five zinc mines accounted for virtually all mine output. In 1984, the five leading mines accounted for 55 percent of mine output, which was the same level of concentration recorded in 1980. During this period, several mines closed temporarily; others closed permanently because of the declining ore grades and the exhaustion of ore reserves. Losses from these closures were somewhat offset by the opening of new mines during this period. The domestic zinc mining industry employed 2,900 persons in 1984, down from 5,500 in 1980.

The domestic zinc smelting industry has significantly diminished during the past 10 years. Ten smelters have closed, resulting in a loss of 860,000 short tons of capacity. In April 1985, yet another smelter closed. Plants were closed because they were obsolete, labor intensive, could not meet environmental standards, were not competitive with foreign smelters, or for a combination of these reasons. 1/

U.S. customs treatment

The rates of duty applicable to imports of zinc ores and metal-bearing materials covered by this supplement appear in table 84. The items eligible for preferential treatment under the GSP are also shown in this table. All items are eligible for duty-free treatment under the CBERA. An excerpt from the TSUSA covering zinc ores and metal-bearing materials and an explanation of the various rates of duty are provided in appendix A.

The duty on the zinc content of zinc-bearing ores and zinc-bearing materials was temporarily suspended from June 28, 1978, through December 31, 1989, as provided for in items 911.00 and 911.02. The duty on zinc dross and skimmings was also temporarily suspended from June 28, 1978, through December 31, 1989, as provided for in item 911.01.

U.S. consumption

Apparent consumption of zinc ore and metal-bearing materials increased from 430,386 metric tons contained zinc ($298.7 million) in 1980 to 494,470 metric tons ($376.2 million) in 1981, decreased to 278,106 metric tons ($241.4 million) in 1983, and then increased to 305,767 metric tons ($287.2 million) in 1984 (table 85). Consumption increased in 1981 and 1984 as a result of higher automotive production and more use of zinc in galvanizing. The decline in demand for ores reflects the closing of domestic zinc smelters during the period. Imports accounted for 30 percent of domestic consumption in 1984, down from the levels of 51 percent in 1981 and 43 percent in 1980.

1/ Mineral Commodity Profiles 1983, U.S. Bureau of Mines, p. 4.

Table 84.—Zinc: U.S. rates of duty, by TSUS items

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1— 3/ 1980	1981	1982	1983	1984	1985	1986	1987	Col. 2 rate of duty
601.66	Ores containing more than 2 percent by weight of any one or more of the metals lead, zinc,or copper, as determined bychemical analysis without deductions, to be initally treated at a lead, zinc, copper, or other plant (zinc content).	Free	3/	3/	3/	3/	3/	3/	3/	3/	Free.
602.20A	All zinc-bearing ores————	67¢/lb. on zinc content	62¢/lb. on zinc content 4/	58¢/ lb. on zinc content 4/	53¢/lb. on zinc content 4/	48¢/lb. on zinc content 4/	44¢/lb. on zinc content 4/	39¢/lb. on zinc content 4/	35¢/lb. on zinc content 4/	30¢/lb. on zinc content 4/	1.67¢/lb. on zinc content 4/
603.30A	Zinc dross and zinc skimmings——	.75¢/lb.	.73¢/lb. 5/	.71¢/ lb. 5/	.69¢/lb. 5/	.67¢/lb. 6/	.66¢/lb. 5/	.64¢/lb. 5/	.62¢/lb. 5/	.60¢/lb. 5/	1.5¢/lb.
	Materials, other than the foregoing, containing, by weight, over 10 percent of any one of the metals copper, lead, or zinc, and to be initially treated at a copper, lead, or zinc plant:										
603.49A	When, under the procedures set forth in headnote 5 of part 2C of this schedule, the market price of copper is considered to be below 24 cents per pound.	1¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.96¢/lb. on copper content + 0.72¢/lb. on lead content + 0.65¢/lb. on zinc content.	0.92¢/ lb. on copper content + 0.69¢/ lb. on lead content + 0.63¢/ lb. on zinc content.	0.89¢/ lb. on copper content + 0.66¢/ lb. on lead content + 0.61¢/ lb. on zinc content.	0.85¢/ lb. on copper content + 0.62¢/ lb. on lead content + 0.58¢/ lb. on zinc content.	0.81¢/ lb. on copper content + 0.59¢/ lb. on lead content + 0.56¢/ lb. on zinc content.	0.77¢/ lb. on copper content + 0.56¢/ lb. on lead content + 0.54¢/ lb. on zinc content.	0.74¢/ lb. on copper content + 0.53¢/ lb. on lead content + 0.52¢/ lb. on zinc content.	0.7¢/ lb. on copper content + 0.5¢/ lb. on lead content + 0.5¢/ lb. on zinc content.	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.
603.50A	Other (zinc content)————	0.8¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.74¢/lb. on copper content + 0.69¢/lb. on lead content + 0.62¢/lb. on zinc content.	0.68¢/ lb. on copper content + 0.64¢/ lb. on lead content + 0.58¢/ lb. on zinc content.	0.62¢/ lb. on copper content + 0.58¢/ lb. on lead content + 0.53¢/ lb. on zinc content.	0.56¢/ lb. on copper content + 0.52¢/ lb. on lead content + 0.48¢/ lb. on zinc content.	0.5¢/ lb. on copper content + 0.47¢/ lb. on lead content + 0.44¢/ lb. on zinc content.	0.44¢/ lb. on copper content + 0.41¢/ lb. on lead content + 0.39¢/ lb. on zinc content.	0.38¢/ lb. on copper content + 0.36¢/ lb. on lead content + 0.35¢/ lb. on zinc content.	0.32¢/ lb. on copper content + 0.3¢/ lb. on lead content + 0.3¢/ lb. on zinc content.	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.

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Table 84.—Zinc: U.S. rates of duty, by TSUS items— Continued

TSUS item No. 1/	Description	Pre-MTN col. 1 rate of duty 2/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1— 3/								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
	Materials, other than the foregoing, containing, by weight, over 5 troy ounces of gold per short ton, or over 100 troy ounces of precious metals per short ton:										
603.54A	When, under the procedures set forth in headnote 5 of part 2C of this schedule, the market price of copper is considered to be below 24 cents per pound.	1¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.95¢/lb. on copper content + 0.71¢/lb. on lead content + 0.64¢/lb. on zinc content.	0.9¢/lb. on copper content + 0.66¢/lb. on lead content + 0.6¢/lb. on zinc content.	0.85¢/lb. on copper content + 0.62¢/lb. on lead content + 0.57¢/lb. on zinc content.	0.8¢/lb. on copper content + 0.57¢/lb. on lead content + 0.53¢/lb. on zinc content.	0.75¢/lb. on copper content + 0.53¢/lb. on lead content + 0.5¢/lb. on zinc content.	0.7¢/lb. on copper content + 0.49¢/lb. on lead content + 0.48¢/lb. on zinc content.	0.65¢/lb. on copper content + 0.44¢/lb. on lead content + 0.43¢/lb. on zinc content.	0.6¢/lb. on copper content + 0.4¢/lb. on lead content + 0.4¢/lb. on zinc content.	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.
603.55A	Other (zinc content)————	0.8¢/lb. on copper content + 0.75¢/lb. on lead content + 0.67¢/lb. on zinc content.	0.7¢/lb. on copper content + 0.66¢/lb. on lead content + 0.59¢/lb. on zinc content.	0.6¢/lb. on copper content + 0.56¢/lb. on lead content + 0.5¢/lb. on zinc content.	0.5¢/lb. on copper content + 0.47¢/lb. on lead content + 0.42¢/lb. on zinc content.	0.4¢/lb. on copper content + 0.37¢/lb. on lead content + 0.33¢/lb. on zinc content.	0.3¢/lb. on copper content + 0.28¢/lb. on lead content + 0.25¢/lb. on zinc content.	0.2¢/lb. on copper content + 0.19¢/lb. on lead content + 0.17¢/lb. on zinc content.	0.1¢/lb. on copper content + 0.09¢/lb. on lead content + 0.08¢/lb. on zinc content.	Free	4¢/lb. on copper content + 1.5¢/lb. on lead content + 1.67¢/lb. on zinc content.

1/ The designation "A" indicates that the item is currently designated as an eligible article for duty-free treatment under the U.S. GSP. "A" indicates that all beneficiary developing countries are eligible for the GSP.

2/ Rate effective prior to Jan. 1, 1980.

3/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

4/ Duty temporarily suspended. See TSUS item 911.00.

5/ Duty temporarily suspended. See TSUS item 911.01.

U.S. production

Domestic production of zinc ore and metal-bearing materials decreased from 317,103 metric tons contained zinc ($261.7 million) in 1980 to 255,157 metric tons ($273.4 million) in 1984 (table 85). Much of the overall decline is attributable to low ore grades, low byproduct value, high production costs, and exhaustion of ore reserves. Strikes at several mines and the closure of 2 mines in 1981 contributed to lower domestic mine production. In 1982, mine production was down due to mine closings; however, the lack of strikes and the opening of two new zinc mines minimized the production loss. Mine production in 1984 fell to a 50-year low, largely due to strikes at mines in Missouri and Tennessee. The United States has zinc resources that are currently estimated at 53 million metric tons, or 18 percent of the world's zinc resources. 1/ The United States accounted for about 4.2 percent of the world's mine production of zinc in 1984.

U.S. trade

U.S. imports.--Imports of zinc ore and metal-bearing materials increased from 184,981 metric tons ($75.8 million) in 1980 to 251,515 metric tons ($114.4 million) in 1981, decreased to 69,757 metric tons ($20.3 million) in 1983, and then increased to 90,790 metric tons ($32.5 million) in 1984 (table 86). Canada and Mexico were the leading suppliers of zinc. Imports in 1981 and 1984 increased to satisfy the demand, which could not be met by domestic production, and then fell in line with decreased demand in 1982 and 1983. In 1984, almost 30 percent of imports entered the United States under the GSP.

The aggregate cost of shipping zinc in concentrates from mines or ports of entry to points of consumption can range from 1.25 to 5 cents per pound. The actual cost reflects the quality of material, method of transportation, size of shipment, and the availability of carriers. Transportation is not a major problem at vertically integrated mines through the concentrate stage. Most of the U.S. imports of ore and concentrates move from coastal or railroad ports of entry to domestic smelters located mainly in the Central and Eastern States.

U.S. exports.--Exports of zinc ore and metal-bearing materials decreased from 71,698 metric tons ($38.7 million) in 1980 to 69,463 metric tons ($45.0 million) in 1981, increased to 89,010 metric tons ($47.2 million) in 1982, and then decreased to 40,180 metric tons ($18.7 million) in 1984 (table 87). The major markets for zinc in 1984 were Canada, the U.S.S.R., the United Kingdom, and Bulgaria. Exports decreased somewhat in 1981 due to increased domestic demand for zinc and decreased mine production. In 1982, exports increased as U.S. material was made available following the closure in late 1981 of a large primary smelter in Idaho and higher concentrate prices elsewhere, primarily in Europe. Exports decreased in 1983 and 1984 as less ore was available due to mine closures and strikes. The United States moved from a position of a trade deficit of 113,283 metric tons ($37.0 million) in 1980 to a trade surplus of 15,676 metric tons ($17.0 million) in 1982, to a trade deficit of 50,610 metric tons ($13.8 million) in 1984.

1/ U.S. Bureau of Mines, Zinc Mineral Commodity Profile 1985.

Table 85. 1/--Zinc ore and metal-bearing materials: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1980-84

(Quantity in metric tons, contained weight; value in thousands of dollars; unit value per metric ton; contained weight

Year	Production	Exports	Imports	Apparent consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	2/ 317,103	71,698	184,981	2/ 430,386	2/ 43.0
1981	312,418	69,463	251,515	494,470	50.9
1982	300,274	89,010	73,336	284,600	25.8
1983	275,294	66,945	69,757	278,106	25.1
1984	255,157	40,180	90,790	305,767	29.7
			Value		
1980	2/ 261,671	38,729	75,772	2/ 298,714	2/ 25.4
1981	306,879	45,048	114,405	376,236	30.4
1982	254,668	47,231	30,272	237,709	12.7
1983	251,204	30,088	20,287	241,403	8.5
1984	273,387	18,700	32,517	287,204	11.3
			Unit value		
1980	-	540.17	409.62	-	-
1981	-	648.52	454.86	-	-
1982	-	530.63	412.79	-	-
1983	-	449.44	290.82	-	-
1984	-	465.41	358.16		

1/ Table number 60 in the original summary.

2/ Revised.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

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Table 86. 1/--Zinc ore and metal bearing material: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (metric tons)				
Canada	112,979	184,270	29,284	21,068	31,407
Mexico	13,552	20,953	20,604	20,250	21,029
Peru	39,857	28,845	6,159	8,786	16,474
Hondura	6,975	4,557	6,253	11,688	10,038
Rep Saf	0	0	0	0	10,105
Austral	8,713	1,949	2,980	851	1,670
Guatmal	0	78	135	87	67
Fr Germ	2,891	9,405	7,862	7,000	0
All other	14	1,458	59	27	0
Total	184,981	251,515	73,336	69,757	90,790
	Value (1,000 dollars)				
Canada	43,558	73,019	12,143	7,163	12,160
Mexico	3,640	11,165	7,985	5,620	7,298
Peru	19,880	20,230	2,498	2,956	5,972
Hondura	2,558	2,840	2,117	3,010	4,102
Rep Saf	-	-	-	-	2,633
Austral	4,590	305	1,004	114	307
Guatmal	-	56	71	35	46
Fr Germ	1,545	5,915	4,431	1,375	-
All other	2	875	22	15	-
Total	75,772	114,405	30,272	20,287	32,517
	Unit value (per metric ton) 2/				
Canada	-	-	-	-	-
Mexico	-	-	-	-	-
Peru	-	-	-	-	-
Hondura	-	-	-	-	-
Rep Saf	-	-	-	-	-
Austral	-	-	-	-	-
Guatmal	-	-	-	-	-
Fr Germ	-	-	-	-	-
All other	-	-	-	-	-
Average	409.62	454.86	412.79	290.82	358.16

1/ Table number 62 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, adn metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 87. 1/--Zinc ore and metal bearing material: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (metric tons)				
Canada	39,975	34,625	30,085	39,475	19,207
USSR	0	0	0	0	5,737
U King	121	1,503	278	1,305	2,302
Bulgar	0	4,013	7,011	9,855	3,004
Japan	5,111	1,863	1,371	2,998	3,707
Mexico	15	3	555	0	2,554
Finland	0	56	0	0	1,166
Fr Germ	5,386	10,515	4,415	1,153	1,425
All other	21,090	16,885	45,295	12,159	1,078
Total	71,698	69,463	89,010	66,945	40,180
	Value (1,000 dollars)				
Canada	16,152	14,348	13,123	15,066	8,488
USSR	-	-	-	-	2,235
U King	608	1,546	683	2,260	2,222
Bulgar	-	2,420	3,210	3,900	1,801
Japan	1,276	508	649	1,014	1,669
Mexico	17	4	321	-	866
Finland	-	13	-	-	454
Fr Germ	4,761	11,994	2,969	1,699	282
All other	15,915	14,216	26,277	6,148	682
Total	38,729	45,048	47,231	30,088	18,700
	Unit value (per metric ton) 2/				
Canada	-	-	-	-	-
USSR	-	-	-	-	-
U King	-	-	-	-	-
Bulgar	-	-	-	-	-
Japan	-	-	-	-	-
Mexico	-	-	-	-	-
Finland	-	-	-	-	-
Fr Germ	-	-	-	-	-
All other	-	-	-	-	-
Average	540.17	648.52	530.63	449.44	465.41

1/ Table number 61 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Zirconium (TSUS item 601.62)

U.S. industry

Zircon, the principal zirconium ore mineral, was recovered as a coproduct with titanium concentrates from sand deposits by two firms in Florida during 1980-84. Mine and mill employment equaled approximately 375 people in 1984, compared to 410 in 1980.

U.S. customs treatment

The rates of duty applicable to imports of zirconium ore covered by this supplement are shown in table 88. An excerpt from the TSUSA covering zirconium articles and an explanation of the various rates of duty are provided in appendix A. Imports of zirconium ore are eligible for duty-free treatment under the CBERA.

Table 88.--Zirconium: U.S. rates of duty, by TSUS items

TSUS item No.	Description	Pre-MTN col. 1 rate of duty 1/	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1--								Col. 2 rate of duty
			1980	1981	1982	1983	1984	1985	1986	1987	
601.63	Zirconium ore (including zirconium sand).	Free	2/	2/	2/	2/	2/	2/	2/	2/	Free.

1/ Rate effective prior to Jan. 1, 1980.
2/ Rate not modified in the Tokyo round of the Multilateral Trade Negotiations.

U.S. consumption

Reported consumption of zirconium ore increased from 140,000 short tons in 1980 to 150,000 short tons in 1981 before declining to 93,000 short tons in 1982 due to a slowdown in demand for zirconium oxides and compounds by the refractory, ceramics, and abrasives industries (table 89). Consumption recovered to an estimated 130,000 short tons in 1984 as major end-use markets began to recover. The ratio of imports to consumption fell to a low of 44 percent in 1983, from a high of 81 percent in 1980. Imports accounted for 51 percent of consumption in 1984.

U.S. production

Although data on zirconium ore mine production are confidential, production during 1980-84 is believed to have been small due to low end-use demand. The United States had zircon resources estimated at 7.0 million short tons, or 11.7 percent of the world total in 1984.

U.S. trade

U.S. imports.--U.S. imports of zirconium ore decreased 61 percent from 113,784 short tons ($10.6 million) in 1980 to 44,487 short tons ($4.4 million) in 1983 in response to decreased demand for imported zirconium ore for use in foundries (table 90). Imports increased to 66,435 short tons ($7.5 million) in 1984 reflecting its increased use in refractories, abrasives, and corrosion-resistant alloys. Australia was the principal foreign source during 1980-84. Transportation costs are considered a significant factor in the marketing of zirconium ore. Transportation costs associated with U.S. imports of the products covered averaged between 15 and 22 percent of the customs value during 1980-84.

U.S. exports.--U.S. exports of zirconium ore increased from 7,730 short tons ($2.7 million) in 1980 to 13,222 short tons ($3.3 million) in 1983 in response to increased demand by the West German and Japanese refractory industries (table 91). Exports fell to 9,528 short tons ($2.6 million) in 1984. Japan and West Germany were the principal U.S. export markets during 1980-84. The U.S. trade deficit in zirconium ore declined from $7.9 million in 1980 to $1.1 million in 1983, before increasing to $4.9 million in 1984.

Table 89. 1/--Zirconium ore: U.S. production, exports of domestic merchandise, imports for consumption, and reported consumption, 1980-84

(Quantity in short tons; value in thousands of dollars; unit value per short ton)

Year	Production	Exports	Imports	Reported consumption	Ratio (percent) of imports to consumption
			Quantity		
1980	2/	7,730	113,784	3/ 140,000	3/ 81
1981	2/	11,631	91,108	150,000	61
1982	2/	11,012	68,466	93,000	74
1983	2/	13,222	44,487	100,000	44
1984	2/	9,528	66,435	4/ 130,000	51
			Value		
1980	2/	2,732	10,595	5/	5/
1981	2/	3,838	8,378	5/	5/
1982	2/	3,268	6,144	5/	5/
1983	2/	3,316	4,420	5/	5/
1984	2/	2,647	7,548	5/	5/
			Unit value		
1980	-	$353.43	$93.12	-	-
1981	-	330.01	91.95	-	-
1982	-	296.77	89.74	-	-
1983	-	250.82	99.35	-	-
1984	-	277.77	113.62	-	-

1/ Table 63 in the original summary.

2/ Production is withheld to avoid the disclosure of individual company confidential data.

3/ Revised.

4/ Estimated by the U.S. Bureau of Mines.

5/ Not available.

Source: Compiled from official statistics of the U.S. Bureau of Mines and the U.S. Department of Commerce.

Table 90. 1/--Zirconium ore: U.S. imports for consumption, by principal sources, 1980-84

Source	1980	1981	1982	1983	1984
	Quantity (short tons)				
Austral-----	97,968	71,852	56,092	36,140	44,214
Rep Saf-----	14,714	16,740	11,603	7,053	20,309
Canada------	1,082	2,444	705	1,176	1,451
Belgium-----	0	0	0	0	461
Fr Germ-----	0	0	0	0	0
Denmark-----	0	0	0	0	0
Japan-------	0	0	0	0	0
Austria------	20	0	60	118	0
All other---	0	72	6	0	0
Total---	113,784	91,108	68,466	44,487	66,435
	Value (1,000 dollars)				
Austral-----	8,888	6,930	5,142	3,385	5,289
Rep Saf-----	1,539	1,138	919	897	2,016
Canada------	165	305	70	122	151
Belgium-----	-	-	-	-	86
Fr Germ-----	-	-	-	-	3
Denmark-----	-	-	1/	3	2
Japan-------	-	-	-	-	1/
Austria------	3	-	7	13	-
All other---	-	5	5	-	-
Total---	10,595	8,378	6,144	4,420	7,548
	Unit value (per short ton) 2/				
Austral-----	-	-	-	-	-
Rep Saf-----	-	-	-	-	-
Canada------	-	-	-	-	-
Belgium-----	-	-	-	-	-
Fr Germ-----	-	-	-	-	-
Denmark-----	-	-	-	-	-
Japan-------	-	-	-	-	-
Austria------	-	-	-	-	-
All other---	-	-	-	-	-
Average--	93.12	91.95	89.74	99.35	113.62

1/ Table number 65 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 91. 1/ --Zirconium ore: U.S. exports of domestic merchandise, by principal markets, 1980-84

Market	1980	1981	1982	1983	1984
	Quantity (short tons)				
Fr Germ	1,766	1,438	5,003	4,017	2,197
Japan	13	21	5	3,493	3,643
Venez	250	524	621	359	762
Mexico	1,674	5,185	1,635	364	1,105
Colomb	1,062	1,043	710	640	487
Argent	31	231	401	1,639	523
Canada	1,572	1,223	880	677	391
Ecuador	0	31	23	79	147
All other	1,362	1,935	1,734	1,954	273
Total	7,730	11,631	11,012	13,222	9,528
	Value (1,000 dollars)				
Fr Germ	726	601	1,100	1,026	828
Japan	6	11	5	365	390
Venez	135	305	375	202	352
Mexico	356	1,068	381	98	302
Colomb	493	486	351	285	248
Argent	11	74	152	552	184
Canada	357	504	306	221	129
Ecuador	-	22	14	50	80
All other	649	767	584	517	134
Total	2,732	3,838	3,268	3,316	2,647
	Unit value (per short ton) 2/				
Fr Germ	-	-	-	-	-
Japan	-	-	-	-	-
Venez	-	-	-	-	-
Mexico	-	-	-	-	-
Colomb	-	-	-	-	-
Argent	-	-	-	-	-
Canada	-	-	-	-	-
Ecuador	-	-	-	-	-
All other	-	-	-	-	-
Average	353.43	330.01	296.77	250.82	277.77

1/ Table number 64 in the original summary.

2/ Individual country unit values have been deleted as they are not representative of the commodities involved due to grouping of ores, concentrates, and metal-bearing materials.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Appendix A

Selected portions of the Tariff Schedules of the United States Annotated (1985)

Explanation of the rates of duty applicable to ores and concentrates and other metal-bearing materials

The rates of duty in column 1 are most-favored-nation (MFN) rates and are applicable to imported products from all countries except those Communist countries and areas enumerated in general headnote 3(d) of the Tariff Schedules of the United States (TSUSA). The People's Republic of China, Hungary, Romania, and Yugoslavia are the only Communist countries eligible for MFN treatment. However, MFN rates do not apply if preferential tariff treatment is sought and granted to products of developing countries under the Generalized system of Preferences (GSP) or the Caribbean Basin Economic Recovery Act (CBERA) or to products of Isreal or of least developed developing countries (LDDC's), as provided under the Special rates of duty column.

Preferential rates of duty in the Special column followed by the code "D" column reflect the full U.S. MTN concession rates implemented without staging for particular products of LDDC's enumerated in general headnote 3(e) (vi) of the TSUS. Where no rate of duty is provided for LDDC's in the Special column for a particular tariff item, the rate of duty in column 1 applies.

The rates of duty in column 2 apply to imported products from those Communist countries and areas enumerated in general headnote 3(d) of the TSUSA.

The GSP affords nonreciprocal tariff preferences to developing countries to aid their economic development and to diversify and expand their production and exports. The U.S. GSP, enacted in title V of the Trade Act of 1974, was implemented by Executive Order No. 11888 of November 24, 1975, and renewed in title V of the Trade and Tariff Act of 1984. It applies to merchandise imported on or after January 1, 1976, and is scheduled to remain in effect through July 4, 1993. It provides duty-free entry to eligible articles imported directly from designated beneficiary developing countries. Eligible articles are identified in the Special column with the duty rate of "Free" followed by an "A" or "A*." The designation "A" means that products of all beneficiary developing countries are eligible for benefits of the GSP, and "A*" indicates that products of certain developing countries, specified in general headnote 3(e) (v) (D) of the TSUS, are not eligible.

The CBERA affords nonreciprocal tariff preferences to developing countries in the Caribbean Basin area to aid their economic development and to diversify and expand their production and exports. The CBERA, enacted in title II of Public Law 98-67 and implemented by Presidential Proclamation 5133 of November 30, 1983, applies to merchandise entered or withdrawn from warehouse for consumption, on or after January 1, 1984, it is scheduled to remain in effect until September 30, 1995. It provides duty-free entry to eligible articles imported directly from designated Basin countries, as reflected by the rate of duty "Free" followed by the code "E" in the Special column. (See general headnote 3(e)(i) and (vii) of the TSUS.)

Preferential rates of duty in the Special column followed by the code "I" reflect the rates of duty applicable to products of Isreal under the United States-Isreal Free Trade Area Implementation Act of 1985, as provided in general headnote 3(e)(viii) of the TSUS. Where no rate of duty is provided for products of Isreal in the Special column for a particular tariff item, the rate of duty in column 1 applies.

Subpart H. - Gems, Gemstones, and Articles Thereof; Industrial Diamonds

Subpart H headnotes:

1. The provisions of this subpart do not cover --
   - (i) abrasives other than diamond dust or powder, and abrasive articles (see subpart C of this part);
   - (ii) drills and other tools provided for in part 3E of schedule 6;
   - (iii) recording or transcribing styluses, needles, and points (see part 5 of schedule 6);
   - (iv) optical elements (see part 2A of schedule 7);
   - (v) jewel bearings (see part 2E of schedule 7); or
   - (vi) jewelry and other articles provided for in part 6 of schedule 7.

2. For the purposes of the tariff schedules, the term "precious stones" means natural diamonds, emeralds, rubies, and sapphires.

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
520.11		Precious and semiprecious stones, natural (except industrial diamonds), whether in their natural form or broken but not advanced in condition or value from their natural state, and not set	....	Free		Free
	20	Diamonds	Carat			
	40	Other	X			
		Industrial diamonds, natural or synthetic, whether or not advanced in condition or value from their crude state by cleaving, cutting, lapping, sawing, or other process, but not set and not suitable for use in the manufacture of jewelry:				
		Synthetic:				
520.19	00	Miners' diamonds	Carat...	Free		Free
520.20	00	Powder or dust	Carat...	Free		Free
520.21	00	Other	Carat...	4.1% ad val.1/	3% ad val. (D) 1/ Free (E,I)	30% ad val.
		Natural:				
520.23		Miners' diamonds	....	Free		Free
	20	Carbonados	Carat			
	40	Other	Carat			
520.27	00	Crushing bort	Carat...	Free		Free
520.28	00	Powder or dust	Carat...	Free		Free
		Other:				
520.29	00	Not advanced in condition or value	Carat...	Free		Free
520.31	00	Advanced in condition or value	Carat...	5.6% ad val.	4.9% ad val.(D) Free (A,E,I)	30% ad val.

1/ Duty on certain tool blanks and drill blanks temporarily suspended. See item 910.00 in part 1B, Appendix to the Tariff Schedules, and general headnote 3(d)(ii).

SCHEDULE 5. - NONMETALLIC MINERALS AND PRODUCTS
Part 1. - Nonmetallic Minerals and Products, Except Ceramic Products and Glass and Glass Products

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		Precious and semiprecious stones, cut but not set, and suitable for use in the manufacture of jewelry:				
		Diamonds:				
520.32	00	Weighing not over 0.5 carat	Carat	Free		10% ad val.
520.33	00	Weighing over 0.5 carat	Carat	Free		10% ad val.
520.35		Rubies and sapphires		Free		10% ad val.
	20	Rubies	Carat			
	40	Sapphires	Carat			
520.37	00	Marcasites	X	1.3% ad val.	Free (A,D,E,I)	20% ad val.
520.38	00	Emeralds	Carat	Free		10% ad val.
520.39	00	Other	X	2.2% ad val.	2.1% ad val. (D) Free (A,E,I)	10% ad val.
		Other precious and semiprecious stones, and articles not specially provided for, of such stones:				
520.51	00	Of precious stones	X	7.5% ad val.	Free (A,E,I)	30% ad val.
520.54	00	Of rock crystal	X	7.1% ad val.	6% ad val. (D) Free (A,E,I)	50% ad val.
520.61	00	Other	X	21% ad val.	Free (A,E) 16.8% (I)	50% ad val.
		Synthetic materials of gemstone quality, such as, but not limited to, corundum, spinel, and rutile, and articles not specially provided for, of such materials:				
520.71	00	Synthetic materials, cut but not set, and suitable for use in the manufacture of jewelry	Carat	3.3% ad val.	3.1% ad val. (D) Free (A,E,I)	10% ad val.
520.75	00	Other	X	9% ad val.	6% ad val. (D,I) Free (E)	30% ad val.
		Subpart J. - Miscellaneous Nonmetallic Minerals and Products				
521.11	00	Asphaltum, bitumen, and limestone-rock asphalt	Ton	Free		Free
521.17		Bauxite, calcined		Free		$1 per ton
	10	Refractory grade	Ton			
	20	Other	Ton			
521.21	00	Brazilian pebble, crude	Lb.	Free		Free
521.31		Coal of all classifications, including culm and slack, and including lignite but not including peat; coke commercially suitable for use as fuel; and compositions of coal, coke, or other carbonaceous material, whether in briquet or other form, used for fuel		Free		Free
	20	Bituminous coal	S. ton			
	40	Coke	S. ton			
	60	Compositions used for fuel	S. ton			
	80	Other	S. ton			

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2

PART 1. - METAL-BEARING ORES AND OTHER METAL-BEARING MATERIALS

Part 1 headnotes:

1. This part covers metal-bearing ores, and certain other metal-bearing materials. This part does not cover --

(a) pigments or fertilizers (see schedule 4, parts 9B and 11, respectively), or chemical compounds (see schedule 4);

(b) slag cements, mineral wools, dolomite, cryolite, chiolite, or alunite, magnesite, or calcined bauxite (see schedule 5, part 1);

(c) precious and semiprecious stones (see schedule 5, part 1H); or

(d) metal waste and scrap, native metals separated from their gangues or matrices, or other metals essentially in a metallic state (see part 2 of this schedule).

2. For the purposes of this part --

(a) the term "metal-bearing ores" embraces only metalliferous minerals, whether crude or concentrated (by crushing, flotation, washing, or by other physical or mechanical separation processes which do not involve substantial chemical change), and roasted or sintered iron, lead, copper, manganese, and zinc concentrates, from which precious metals or base metals, as defined in headnote 2 of this schedule, are commercially obtained, including metals obtained directly in unalloyed form, in the form of alloys, or in the form of chemical compounds;

(b) the term "other metal-bearing materials of a type commonly used for the extraction of metal or as a basis for the manufacture of chemical compounds" embraces ash, slag, dross, scale, mattes, speiss, skimmings, flue dust, fumes, refinery slimes, residues, and all other materials (except metal-bearing ores, as above defined, and the dross or residuum from burnt pyrites) of a type from which precious metals or base metals, as defined in headnote 2 of this schedule, are commonly obtained (either as the result of a further processing of the materials as such, or as a result of the addition of the materials as alloying materials to other materials being processed), including metals obtained directly in unalloyed form, in the form of alloys, or in the form of chemical compounds;

(c) lead plants are pyrometallurgical reduction facilities whose principal production by weight, exclusive of waste materials and by-products, consists of lead bullion;

SCHEDULE 6. - METALS AND METAL PRODUCTS
Part 1. - Metal-Bearing Ores and Other Metal-Bearing Materials

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2

(d) *copper plants* are pyrometallurgical reduction facilities whose principal production by weight, exclusive of waste materials and by-products, consists of blister copper, black copper, anode copper, or fire-refined copper;

(e) *zinc plants* are facilities whose principal production by weight, exclusive of waste materials and by-products, consists of unwrought zinc metal, zinc pigments, zinc compounds, or zinc fume; and

(f) *other plants* are all facilities which do not fall within the foregoing definitions of lead plants, copper plants, and zinc plants.

3. The duties imposed under item 602.10, 602.20, 602.28, or 602.30 of this part on the copper, lead, or zinc contained in metal-bearing ores are cumulative duties which apply in addition to the duties, if any, otherwise imposed on such ores.

4. *Dutiable Metal Content of Ores and Other Materials*: (a) The specific rates of duty imposed under the provisions of this part on the metal content of ores and other materials shall apply to the quantity of metal contained therein as determined by chemical analysis without deductions, whether recovered as metals, as alloys, or as chemical compounds or used directly in the manufacture of articles, except as hereinafter provided in this headnote.

(b) *Allowable Absolute Deductions for Losses on Copper, Lead, or Zinc Content*: With respect to ores or other materials provided for in this part which are subject to duty at specific rates on their copper, lead, or zinc content, absolute deductions from the respective quantities of each of such metal contents as determined by chemical analysis shall be allowed, except when losses which exceed such absolute deductions are allowable as provided in 4(c) of this headnote, as follows:

- (i) *Materials initially treated at copper plants*:
  - (A) From the copper content, 2 units
  - (B) From the lead content, 2 units plus 50 percent by weight of any remaining lead content
  - (C) From the zinc content, 100 percent by weight
- (ii) *Materials initially treated at lead plants*:
  - (A) From the copper content, 2 units
  - (B) From the lead content, 2 units
  - (C) From the zinc content, 2 units or 20 percent by weight of the zinc content, whichever is greater
- (iii) *Materials initially treated at zinc plants*:
  - (A) From the copper content, 2 units
  - (B) From the lead content, 2 units
  - (C) From the zinc content, 6 units
- (iv) *Materials initially treated at other plants*:
  - (A) From the copper content, 2 units
  - (B) From the lead content, 2 units
  - (C) From the zinc content, 2 units

Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2

For the purposes of these provisions, one unit is 20 pounds of the respective metal per dry short ton of imported material.

(c) Allowable Deductions in lieu of Absolute Deductions on Copper, Lead, or Zinc Content: With respect to ores or other materials provided for in this part which are subject to duty at specific rates on their copper, lead, or zinc content, if more than 90 percent by weight of --

(i) the zinc content of the imported materials initially treated at any lead plant,

(ii) the copper content of the imported materials initially treated at any zinc plant, or

(iii) the copper, lead, or zinc content of the imported materials initially treated at any plant other than a copper, lead, or zinc plant,

is lost in processing during the fiscal year at such plant, the rate of loss to be applied to the like content of materials imported during the 12-month period beginning on the first day of the calendar month nearest to 90 days after the close of the said fiscal year to be initially treated at such plant shall be the actual percentage by weight of such losses for such plant during the said fiscal year.

(d) Claims for Deductions: The deductions provided for in 4(b) and 4(c), supra, do not apply to imported materials unless the importer, at the time entry for consumption or for warehouse is filed, makes claim therefor in writing and certifies as to the name, location, and status of the plant at which the materials are to be initially treated. If material with respect to which a certification has been filed is to be transferred to a plant for initial treatment other than the plant specified in the certification, the importer shall notify the collector at the port of entry in advance of the transfer of the material and the entry shall be liquidated or reliquidated on the basis of the allowable losses for the plant to which transfer is to be made. If the importer fails to so notify the collector or fails to transfer the material after having notified the collector of his intention to do so, no deductions shall be allowable on such material and liquidation or reliquidation of the entry shall be made accordingly.

(e) Statements of Losses: If losses are to be claimed under headnote 4(c), supra, for a specific plant, the importer shall, not later than 60 days after the close of each fiscal year, file with the collector of customs of the customs collection district in which the plant is located, a statement of losses for said fiscal year for the plant involved and at the request of the importer said collector shall advise the collectors of customs at other ports designated by the importer of the rates of losses at the said plant.

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2

(f) Maintenance of Plant Records: Each plant for which any of the deductions provided for in this headnote are claimed shall maintain records showing the receipt and disposition of each shipment of materials received in the plant and, if losses are to be claimed under headnote 4(c), supra, a record of the losses experienced, and these records shall be made available for inspection by customs officers.

5. When the classification of imported materials under any provision of this part is dependent on the percentage of metal content, such percentage shall be the ratio of the total quantity of the respective metal content to the total quantity of imported material when computed on a dry-weight basis, i.e., free of all uncombined moisture.

Part 1 statistical headnote:

1. For the purposes of this part --

(a) the statistical reporting requirements for lead-, zinc-, or copper-bearing ores differ from the usual requirements in that multiple numbers must be used to report a single commodity. In all cases where ores are dutiable on the metal content under one or more of the items 602.10-.30, one or more of the reporting numbers under items 601.03-.66 must also be shown on separate lines on the import entry form. For example, a shipment of zinc concentrates to be initially treated at a zinc plant and containing also lead and copper (in excess of 2 percent by weight, as determined by chemical analysis without deductions), and also gold and silver, shall be reported under the following eight reporting numbers:

601.6621 (lead content), 601.6622 (zinc content), 601.6623 (copper content), 601.6624 (gold content), 601.6625 (silver content), 602.1021 (dutiable lead content), 602.2022 (dutiable zinc content), and 602.3023 (dutiable copper content);

(b) the 7-digit reporting numbers under items 601.39, 601.66, 603.50, 603.55, and 603.65 are not mutually exclusive. For example, a material classifiable under item 603.55 and containing lead, copper, gold, and silver would require the numbers 603.5510 (lead content), 603.5530 (copper content), 603.5540 (gold content), and 603.5550 (silver content). The quantity and value of each component metal of the material should be shown with the corresponding 7-digit number;

(c) the quantity of metal content to be reported shall be the assay quantity without deductions unless otherwise specified;

(d) for lead-, copper-, or zinc-bearing ores separate values for each such metal shall be reported in connection with the quantities reported under items 602.10, 602.20, or 602.30. The value of the gold or silver content, if any, shall be reported in connection with the appropriate 7-digit number in item 601.39 or 601.66. The sum of the separate values shown shall be equal to the total value of the ore; and

Item	Stat. Suffix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		(e) for precious metal ores classifiable under item 601.39 and not containing dutiable amounts of lead, zinc, or copper, separate values for gold, silver, or "other precious metal" content shall be reported in connection with the corresponding 7-digit item number found therein.				
		Metal-bearing ores and the dross or residuum from burnt pyrites:				
601.03	00	Antimony ore	Lb.....v	Free		Free
		antimony content..	Lb.			
601.06	00	Bauxite	Ton.....	Free		$1 per ton
601.09	00	Beryllium ore	Lb......	Free		Free
601.12	00	Cerium ore	Lb......	Free		Free
601.15		Chrome ore	....	Free		Free
	20	Having a chromium content equivalent to not more than 40% chromic oxide (Cr_2O_3)	Ton v			
		chromic oxide content..	Ton			
	40	Having a chromium content equivalent to more than 40% but less than 46% chromic oxide (Cr_2O_3)	Ton v			
		chromic oxide content..	Ton			
	60	Having a chromium content equivalent to 46% or more chromic oxide (Cr_2O_3)	Ton v			
		chromic oxide content..	Ton			
601.18	00	Cobalt ore	Lb.....v	Free		Free
		cobalt content..	Lb.			
601.21	00	Columbium ore	Lb......	Free		Free
601.24		Iron ore, including manganiferous iron ore containing not over 10 percent by weight of manganese, and the dross or residuum from burnt pyrites	....	Free		Free
	30	Not concentrated or sintered	Ton			
	50	Other	Ton			
601.27		Manganese ore, including ferruginous manganese ore, and manganiferous iron ore, all the foregoing containing over 10 percent by weight of manganese	....	Free		1c per lb. on manganese content
	20	Containing under 35% by weight of manganese	Lb. v			
		manganese content..	Lb.			
	40	Containing 35% or over, but less than 47% by weight of manganese	Lb. v			
		manganese content..	Lb.			
	60	Containing 47% or more by weight of manganese	Lb. v			
		manganese content..	Lb.			
601.30	00	Mercury ore	Lb......	Free		Free
601.33	00	Molybdenum ore	Lb.....v	9.8c per lb. on molybdenum content	9c per lb. on molybdenum content (D) Free (A,E,I)	35c per lb. on molybdenum content
		molybdenum content..	Lb.			
601.36	00	Nickel ore	Lb.....v	Free		Free
		nickel content..	Lb.			

SCHEDULE 6. - METALS AND METAL PRODUCTS
Part 1. - Metal-Bearing Ores and Other Metal-Bearing Materials

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		Metal-bearing ores and the dross or residuum from burnt pyrites (con.):				
601.39		Precious metal ores	....	Free		Free
	20	Gold content	Oz.troy 1/			
	40	Silver content	Oz.troy 1/			
	60	Other precious metal content	Oz.troy 1/			
601.42	00	Tantalum ore	Lb......	Free		Free
601.45	00	Thorium ore (including monazite sand)	Ton.....	Free		Free
601.48	00	Tin ore and black oxide of tin tin content	.... Ton	Free		Free
601.51		Titanium ore (including ilmenite, ilmenite sand, rutile, and rutile sand)	....	Free		Free
	20	Ilmenite and ilmenite sand	Lb.			
	40	Other	Lb.			
601.54	00	Tungsten ore tungsten content	Lb.....v Lb.	17¢ per lb. on tungsten content	Free (A,E,I)	50¢ per lb. on tungsten content
601.57	00	Uranium ore	Lb......	Free		Free
601.60	00	Vanadium ore vanadium pentoxide content	Lb.....v Lb.	Free		Free
601.63	00	Zirconium ore (including zirconium sand)	Lb......	Free		Free
601.66		Other metal-bearing ores	....	Free		Free
		Ores containing more than 2 percent by weight of any one or more of the metals lead, zinc, or copper, as determined by chemical analysis without deductions:				
		Ore to be initially treated at a lead plant:				
	11	Lead content (quantity only)	Lb. 2/			
	12	Zinc content (quantity only)	Lb. 2/			
	13	Copper content (quantity only)	Lb. 2/			
	14	Gold content	Oz.troy 1/			
	15	Silver content	Oz.troy 1/			
		Ore to be initially treated at a zinc plant:				
	21	Lead content (quantity only)	Lb. 2/			
	22	Zinc content (quantity only)	Lb. 2/			
	23	Copper content (quantity only)	Lb. 2/			
	24	Gold content	Oz.troy 1/			
	25	Silver content	Oz.troy 1/			
		Ore to be initially treated at a copper plant:				
	31	Lead content (quantity only)	Lb. 2/			
	32	Zinc content (quantity only)	Lb. 2/			
	33	Copper content (quantity only)	Lb. 2/			
	34	Gold content	Oz.troy 1/			
	35	Silver content	Oz.troy 1/			
		Ore to be initially treated at any other than a lead, zinc, or copper plant:				
	41	Lead content (quantity only)	Lb. 2/			
	42	Zinc content (quantity only)	Lb. 2/			
	43	Copper content (quantity only)	Lb. 2/			
	44	Gold content	Oz.troy 1/			
	45	Silver content	Oz.troy 1/			
	50	Other ores (specify kind)	Lb. 1/			

1/ Report value only of stated metal content.
2/ Assay quantity without deductions.

SCHEDULE 6. - METALS AND METAL PRODUCTS
Part 1. - Metal-Bearing Ores and Other Metal-Bearing Materials

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		Any of the foregoing ores bearing lead, zinc, or copper:				
602.10		All lead-bearing ores..............................	....	0.75c per lb. on lead content	Free (A*,E,I)	1.5c per lb. on lead content
		Lead from ore to be initially treated at a:				
	11	Lead plant (dutiable lead content).......	Lb. 1/			
	21	Zinc plant (dutiable lead content).......	Lb. 1/			
	31	Copper plant (dutiable lead content).....	Lb. 1/			
	41	Other plant (dutiable lead content)......	Lb. 1/			
602.20		All zinc-bearing ores..............................	....	0.39c per lb. on zinc content 2/	0.3c per lb. on zinc content 2/(D) Free (A,E,I)	1.67c per lb. on zinc content
		Zinc from ore to be initially treated at a:				
	12	Lead plant (dutiable zinc content).......	Lb. 1/			
	22	Zinc plant (dutiable zinc content).......	Lb. 1/			
	32	Copper plant (dutiable zinc content).....	Lb. 1/			
	42	Other plant (dutiable zinc content)......	Lb. 1/			
		All copper-bearing ores:				
602.25	00	For an aggregate amount not to exceed 15,000 tons of copper content in ores which contain by weight not over 15 percent copper and which are entered in any calendar year for use as a flux or sulphur reagent in copper smelting or converting................. copper content....	.... Lb.	Free of duty on copper content		Free of duty on copper content
		Other:				
602.28		When, under the procedures set forth in headnote 5 of part 2C of this schedule, the market price of copper is considered to be below 24 cents per pound..................................	....	0.8c per lb. on copper content	Free (A,E,I)	4c per lb. on copper content
602.29	00	If products of Cuba.................	....	Free of duty on copper content (s)		
602.30		Other....................................	....	Free		4c per lb. on copper content
		Copper from ore to be initially treated at a:				
	13	Lead plant (dutiable copper content)......................	Lb. 1/			
	23	Zinc plant (dutiable copper content)......................	Lb. 1/			
	33	Copper plant (dutiable copper content)......................	Lb. 1/			
	43	Other plant (dutiable copper content)......................	Lb. 1/			

(s) = Suspended. See general headnote 3(b).

1/ Report value only of stated metal content.

2/ Duty temporarily suspended. See item 911.00 in part 1B, Appendix to the Tariff Schedules, and general headnote 3(d)(ii).

SCHEDULE 6. - METALS AND METAL PRODUCTS
Part 1. - Metal-Bearing Ores and Other Metal-Bearing Materials

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		Other metal-bearing materials of a type commonly used for the extraction of metal or as a basis for the manufacture of chemical compounds:				
603.05	00	Aluminum dross and skimmings........................	Lb......	Free		Free
603.10	00	Antimony, needle or liquated........................	Lb......	0.1¢ per lb.	Free (A,E,I)	0.25¢ per lb.
603.15	00	Ferrous scale..	Ton.....	32¢ per ton	30¢ per ton(D) Free (A,E,I)	75¢ per ton
603.20	00	Flue dust or fume containing, by weight, over 55 percent of cadmium and not over 15 percent of any one or combination of the metals lead, zinc, or copper.. cadmium content..	Lb.....v Lb.	Free		Free
603.25	00	Lead dross.. lead content..	Lb.....v Lb.	0.94¢ per lb. on lead content	0.9¢ per lb. on lead content (D) Free (A,E,I)	2.125¢ per lb. on lead conten
603.30	00	Zinc dross and zinc skimmings....................... zinc content..	Lb.....v Lb.	0.64¢ per lb.1/	0.6¢ per lb.1/(D) Free (A,E,I)	1.5¢ per lb.
		Other:				
603.40	00	Materials in chief value of molybdenum........ molybdenum content..	Lb.....v Lb.	7¢ per lb. on molybdenum content + 2.2% ad val.	6¢ per lb. on molybdenum content + 1.9% ad val.(D) Free (A*,E,I)	50¢ per lb. on molybdenum content + 15% ad val.
603.45	00	Materials in chief value of tungsten.......... tungsten content..	Lb.....v Lb.	10¢ per lb. on tungsten content + 4.8% ad val.	Free (A,E,I)	60¢ per lb. on tungsten content + 40% ad val.
		Materials, other than the foregoing, containing, by weight, over 10 percent of any one of the metals copper, lead, or zinc, and to be initially treated at a copper, lead, or zinc plant:				
603.49		When, under the procedures set forth in headnote 5 of part 2C of this schedule, the market price of copper is considered to be below 24 cents per pound..	....	0.77¢ per lb. on copper content + 0.56¢ per lb. on lead content + 0.54¢ per lb. on zinc content 2/	0.7¢ per lb. on copper content + 0.5¢ per lb. on lead content + 0.5¢ per lb. on zinc content2/(D) Free (A,E,I)	4¢ per lb. on copper content + 1.5¢ per lb. on lead content + 1.67¢ per lb. on zinc content
603.50		Other..	....	0.44¢ per lb. on copper content + 0.41¢ per lb. on lead content + 0.39¢ per lb. on zinc content 2/	0.32¢ per lb. on copper content + 0.3¢ per lb. on lead content + 0.3¢ per lb. on zinc content2/(D) Free (A,E,I)	4¢ per lb. on copper content + 1.5¢ per lb. on lead content + 1.67¢ per lb. on zinc conten

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1/ Duty temporarily suspended. See item 911.01 in part 1B, Appendix to the Tariff Schedules and general headnote 3(d)(ii).

2/ Duty on zinc bearing materials temporarily suspended. See item 911.02 in part 1B, Appendix to the Tariff Schedules and general headnote 3(d)(ii).

SCHEDULE 6. - METALS AND METAL PRODUCTS
Part 1. - Metal-Bearing Ores and Other Metal-Bearing Materials

Item	Stat. Suffix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		Other metal-bearing materials, etc. (con.):				
		Other (con.):				
		Materials, other than the foregoing, containing, by weight, over 10 percent of any one of the metals copper, lead, or zinc, and to be initially treated at a copper, lead, or zinc plant (con.):				
603.50 (con.)		Other (con.):				
	10	Lead content	Lb. 1/ v			
		dutiable lead content	Lb.			
		Zinc content:				
	20	Of zinc fume	Lb. 1/ v			
		dutiable zinc content	Lb.			
	30	Other	Lb. 1/ v			
		dutiable zinc content	Lb.			
	40	Copper content	Lb. 1/ v			
		dutiable copper content	Lb.			
	50	Gold content	Oz.troy 2/			
	60	Silver content	Oz.troy 2/			
		Materials, other than the foregoing, containing, by weight, over 5 troy ounces of gold per short ton, or over 100 troy ounces of precious metals per short ton:				
603.54		When, under the procedures set forth in headnote 5 of part 2C of this schedule, the market price of copper is considered to be below 24 cents per pound	....	0.7¢ per lb. on copper content + 0.49¢ per lb. on lead content + 0.48¢ per lb. on zinc content 3/	0.6¢ per lb. on copper content + 0.4¢ per lb. on lead content + 0.4¢ per lb. on zinc content 3/ (D) Free (A,E,I)	4¢ per lb. on copper content + 1.5¢ per lb. on lead content + 1.67¢ per lb. on zinc content
603.55		Other	....	0.2¢ per lb. on copper content + 0.19¢ per lb. on lead content + 0.17¢ per lb. on zinc content 3/	Free (A,D,E,I)	4¢ per lb. on copper content + 1.5¢ per lb. on lead content + 1.67¢ per lb. on zinc content
	10	Lead content (dutiable lead content)	Lb.			
	20	Zinc content (dutiable zinc content)	Lb.			
	30	Copper content (dutiable copper content)	Lb.			
		Precious metal content:				
	40	Gold	Oz.troy 2/			
	50	Silver	Oz.troy 2/			
	60	Other	Oz.troy 2/			

1/ Assay quantity without deductions.

2/ Report value only of stated metal content.

3/ Duty on zinc bearing materials temporarily suspended. See item 911.02 in part 1B, Appendix to the Tariff Schedules, and general headnote 3(d)(ii).

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Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty 1	Rates of Duty Special	Rates of Duty 2
		Other metal-bearing materials, etc. (con.):				
		Other (con.):				
603.60	00	Materials, other than the foregoing, containing, by weight, over 10 percent of nickel	Lb.....v	Free		Free
		nickel content...	Lb.			
603.62	00	Materials, other than the foregoing, which consist of slag containing by weight, over 40 percent titanium, and which if containing over 2 percent by weight of copper, lead, or zinc are not to be treated for the recovery thereof	Lb......	Free		Free
603.65		Materials, other than the foregoing, which are residues not advanced in value or condition by any means, and which if containing over 2 percent by weight of copper, lead, or zinc are not to be treated for the recovery thereof	....	Free		Free
	10	Vanadium bearing materials	Lb. v			
		vanadium pentoxide content..	Lb.			
	30	Other (specify kind)	Lb.			
	40	Gold content.....	Oz.troy1/			
	60	Silver content...	Oz.troy1/			
603.67	00	Materials, other than the foregoing, which are synthetic tantalum-columbium concentrates	Lb......	Free		30% ad val.
603.70		Other	....	5.6% ad val. 2/ 3/	5% ad val.2/3/(D) Free (A,E,I)	30% ad val.
	10	Synthetic rutile	Lb.			
	40	Other	Lb.			

1/ Report value only of stated metal content.

2/ Duty on copper scale temporarily suspended. See item 911.05 in part 1B, Appendix to the Tariff Schedules and general headnote 3(d)(ii).

3/ Duty on yttrium bearing materials and compounds containing by weight more than 19% but less than 85% yttrium oxide equivalent temporarily suspended. See item 907.51 in part 1B, Appendix to the Tariff Schedules.

APPENDIX TO THE TARIFF SCHEDULES
Part 1. Temporary Legislation

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty 1	Rates of Duty Special	Rates of Duty 2	Effective Period
907.65	1/	Tartaric acid (provided for in item 425.94, part 2D, schedule 4)..	1/	Free		No change	On or before 12/31/88
907.66	1/	Potassium salts: Antimony tartrate (tartar emetic) (provided for in item 426.72, part 2D, schedule 4).....	1/	Free		No change	On or before 12/31/88
907.68	1/	Cream of tartar (provided for in item 426.76, part 2D, Schedule 4)..................................	1/	Free		No change	On or before 12/31/88
907.69	1/	Sodium tartrate (Rochelle salts) (provided for in item 426.82, part 2D, Schedule 4)......................	1/	Free		No change	On or before 12/31/88
907.76	1/	Lactulose (provided for in item 439.50, part 3C, schedule 4)..	1/	Free		No change	On or before 12/31/87
907.79	1/	Iron-dextran complex (provided for in item 440.00, part 3C, schedule 4)..................................	1/	Free		No change	On or before 12/31/87
909.01	1/	Graphite, crude and refined, natural (provided for in item 517.21, or 517.24, part 1E, schedule 5)........	1/	Free		No change	On or before 12/31/87
909.40	1/	Watch glasses other than round watch glasses (provided for in item 547.13, part 3C, schedule 5)..	1/	5.6% ad val.	4.9% ad val.(D) No change (A,E,I)	No change	On or before 12/31/87
910.00	1/	Tool blanks and drill blanks, wholly or in chief value of industrial diamonds (provided for in item 520.21, part 1H, or item 523.91, part 1K, schedule 5)..	1/	Free		30% ad val.	On or before 12/31/87
911.00	1/	Zinc-bearing ores (provided for in item 602.20, part 1, schedule 6).....................................	1/	Free on zinc content		No change	On or before 12/31/89
911.01	1/	Zinc dross and zinc skimmings (provided for in item 603.30, part 1, schedule 6)..........................	1/	Free		No change	On or before 12/31/89
911.02	1/	Zinc-bearing materials (provided for in items 603.49, 603.50, 603.54, and 603.55, part 1, schedule 6)........	1/	Free on zinc content	No change (A,D,E,I)	No change	On or before 12/31/89
911.03	1/	Zinc waste and scrap (provided for in item 626.10, part 2, schedule 6)............................	1/	Free		No change	On or before 12/31/89
911.05	1/	Copper scale (provided for in item 603.70, part 1, schedule 6)..	1/	Free		No change	On or before 12/31/85
[illegible]	[illegible]	[illegible]	1/	Free		No change	On or before [illegible]

1/ See Appendix statistical headnote 1.

Note: The shaded area indicates that the effective period for special tariff treatment has expired.

(3rd supp. 9/1/85)

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Appendix B

Ores and concentrates: World mine production, by principal producers, 1980-84

Ores and concentrates: World mine production, by principal producers, 1980-84

Producer	1980	1981	1982	1983	1984
	Antimony (short tons, antimony content)				
Bolivia	17,047	16,866	15,408	11,600	11,000
China	11,000	11,000	11,000	11,000	11,000
U.S.S.R	9,300	9,500	9,900	10,000	10,000
Republic of South Africa	14,413	10,748	10,070	6,947	8,000
All other	18,260	15,010	12,899	13,754	13,500
Total	70,020	63,124	59,277	53,301	53,500
	Bauxite (1,000 metric tons)				
Australia	27,178	25,541	23,625	24,500	25,000
Guinea	11,862	11,112	11,827	11,080	12,000
Brazil	5,538	5,770	6,289	7,000	7,500
Jamaica	12,054	11,682	8,361	7,300	6,900
U.S.S.R	4,600	4,600	4,600	4,600	4,600
All other	27,983	26,818	23,091	21,536	22,800
Total	89,215	85,523	77,793	76,016	78,800
	Beryllium (short tons)				
U.S.S.R	2,000	2,000	2,000	2,100	2,100
Brazil	606	894	1,161	882	1,380
All other	217	304	253	207	160
Total (excluding United States)	2,823	3,198	3,414	3,189	3,640
	Chrome (1,000 short tons)				
U.S.S.R	2,701	2,646	2,701	2,700	2,700
Republic of South Africa	3,763	3,164	2,385	2,460	2,500
Albania	838	937	965	990	1,000
Zimbabwe	611	591	476	475	500
All other	2,525	2,322	2,243	2,296	2,510
Total	10,438	9,660	8,770	8,921	9,210
	Cobalt (short tons)				
Zaire	17,000	17,000	12,460	12,460	14,000
Zambia	4,850	3,765	3,580	3,530	4,000
U.S.S.R	2,300	2,400	2,500	2,600	2,700
Canada	1,767	2,293	1,548	1,746	1,200
All other	8,261	7,632	6,758	6,260	7,200
Total	34,178	33,090	26,846	26,596	29,100

Ores and concentrates: World mine production, by principal producers, 1980-84--Continued

Producer	1980	1981	1982	1983	1984
	Columbium (1,000 pounds, columbium content)				
Brazil	28,639	27,811	18,239	15,270	18,000
Canada	3,813	4,243	4,746	2,870	4,700
All other	907	610	403	943	300
Total	33,359	32,664	23,388	18,680	23,000
	Copper (1,000 metric tons)				
Chile	1,068	1,081	1,241	1,257	1,250
United States	1,181	1,538	1,140	1,038	1,050
U.S.S.R	900	950	1,000	1,000	1,000
Canada	716	691	606	625	625
Zambia	596	588	530	543	540
Zaire	459	505	495	535	525
All other	2,743	2,822	2,951	3,046	3,130
Total	7,663	8,175	7,963	8,044	8,120
	Iron ore (1,000 long tons, metal content)				
U.S.S.R	130,786	129,000	129,000	241,000	242,000
Brazil	73,398	62,604	70,370	87,600	100,000
Australia	59,482	52,692	54,692	72,800	84,000
China	36,900	34,500	34,500	70,000	71,000
United States	43,888	46,539	22,642	37,600	51,000
India	24,853	25,479	25,200	38,200	40,000
Canada	30,316	30,900	21,390	33,000	36,000
All other	108,795	105,465	91,759	149,400	161,000
Total	508,418	487,179	450,453	729,600	785,000
	Lead (1,000 metric tons)				
United States	550	446	513	449	340
Australia	398	388	455	477	430
U.S.S.R	420	425	430	435	440
Canada	297	332	341	252	300
All other	1,783	1,758	1,669	1,711	1,740
Total	3,448	3,349	3,408	3,324	3,250
	Manganese (1,000 short tons)				
U.S.S.R	10,750	10,090	10,830	11,500	11,600
Republic of South Africa	6,278	5,555	5,750	3,181	2,700
Brazil	2,515	2,251	2,580	2,300	2,300
All other	9,546	7,998	7,447	7,758	8,300
Total	29,089	25,894	26,607	24,739	24,900

Ores and concentrates: World mine production, by principal producers, 1980-84--Continued

Producer	1980	1981	1982	1983	1984
	Mercury (76-pound flasks)				
U.S.S.R	62,000	63,000	64,000	64,000	65,000
Spain	43,038	46,008	48,808	48,000	50,000
China	20,000	20,000	20,000	20,000	20,000
United States	30,657	27,904	25,760	25,070	19,100
Algeria	24,403	25,000	11,000	10,000	10,000
All other	17,328	28,985	28,128	21,423	23,000
Total	197,426	210,897	197,696	188,493	187,100
	Molybdenum (1,000 lbs, molybdenum content)				
United States	150,686	139,900	84,381	33,951	99,000
Chile	30,133	33,863	44,198	33,100	35,300
U.S.S.R	22,900	23,600	24,300	24,300	25,000
Canada	26,211	31,160	30,779	23,100	18,100
All other	11,804	12,602	23,686	23,410	26,600
Total	241,734	241,125	207,344	137,861	204,000
	Nickel (short tons)				
U.S.S.R	170,000	174,000	182,000	187,000	190,000
Canada	203,709	176,642	97,824	134,300	148,000
Australia	81,927	82,095	97,613	99,200	110,000
New Caledonia	95,451	86,079	66,250	69,400	45,000
All other	308,339	283,812	261,449	269,442	275,000
Total	859,426	802,628	705,136	759,342	768,000
	Gold (1,000 troy ounces)				
Republic of South Africa	21,669	21,121	21,355	21,847	22,000
U.S.S.R	8,300	8,425	8,550	8,600	8,600
All other	9,236	11,703	13,152	14,086	14,400
Total	39,205	41,249	43,057	44,533	45,000
	Silver (1,000 troy ounces)				
Mexico	50,952	52,916	59,175	61,435	62,000
Peru	44,419	46,940	53,639	55,871	58,000
U.S.S.R	46,000	46,500	46,900	47,200	48,000
United States	32,329	40,683	40,248	43,415	44,000
Canada	33,340	36,298	42,246	35,560	38,000
Australia	24,654	23,906	29,156	32,150	32,000
Poland	24,627	20,576	21,058	24,900	25,000
Chile	9,598	11,610	12,288	11,600	12,000
All other	79,007	82,352	79,056	78,487	81,000
Total	344,026	361,781	383,766	390,618	400,000

Ores and concentrates: World mine production, by principal producers, 1980-84--Continued

Producer	1980	1981	1982	1983	1984
	Platinum group metals (1,000 troy ounces)				
U.S.S.R	3,250	3,350	3,500	3,600	3,600
Republic of South Africa	3,100	3,110	2,600	2,600	2,800
Canada	411	383	228	167	200
All other	87	88	103	115	100
Total	6,848	6,931	6,431	6,482	6,700
	Thorium (metric tons)				
Australia	14,079	13,251	9,433	14,500	15,000
Brazil	2,532	2,100	1,768	2,000	6,000
India	3,395	3,704	4,000	4,000	4,000
All other	613	537	966	830	1,555
Total	20,619	19,592	10,167	21,330	26,555
	Tantalum (1,000 pounds, tantalum content)				
Thailand	259	23	20	278	250
Australia	116	230	200	150	200
Brazil	380	178	130	90	100
All other	413	391	340	160	190
Total	1,168	822	690	678	740
	Tin (metric tons)				
Malaysia	61,404	59,938	52,330	42,000	40,000
U.S.S.R	36,000	36,000	37,000	37,000	35,000
Indonesia	32,527	35,392	33,806	27,000	26,000
Bolivia	27,291	29,830	26,773	24,400	25,000
Thailand	33,685	31,474	26,109	19,943	20,000
All other	56,393	60,479	61,158	61,277	63,000
Total	247,300	253,113	237,176	211,620	209,000
	Titanium (1,000 short tons)				
Australia	1,896	1,732	1,532	1,175	1,340
Canada	964	837	737	675	770
Norway	913	725	608	600	730
U.S.S.R	471	481	486	491	491
Republic of South Africa	432	463	472	482	480
All other	1,255	1,423	1,043	907	856
Total	5,931	5,661	4,878	4,330	4,667

Ores and concentrates: World mine production, by principal producers, 1980-84--Continued

Producer	1980	1981	1982	1983	1984
	Tungsten (metric tons, contained tungsten)				
China	15,000	13,500	12,500	12,500	12,500
U.S.S.R.	8,700	8,850	9,000	9,100	9,100
Bolivia	2,732	2,779	2,534	2,400	2,600
Republic of Korea	2,737	2,739	2,420	2,293	2,400
Australia	3,575	3,517	2,618	2,060	2,000
All other	19,153	17,626	16,233	10,565	14,600
Total	51,897	49,011	45,305	38,918	43,200
	Vanadium (short tons, contained vanadium)				
U.S.S.R.	10,500	10,500	10,500	10,500	10,500
Republic of South Africa	14,000	14,100	12,600	8,900	9,500
China	5,000	5,000	5,000	5,000	5,500
Finland	3,135	3,431	3,470	3,516	3,550
United States	6,326	7,026	5,611	3,064	2,800
All other	1,550	1,308	984	770	150
Total	40,511	41,365	38,165	31,750	32,000
	Zinc (1,000 metric tons, zinc content)				
Canada	1,059	1,096	1,189	1,070	1,185
U.S.S.R.	785	790	800	805	805
Australia	495	518	665	695	645
Peru	488	499	507	553	565
All other	3,135	2,945	3,077	3,123	3,150
Total	5,962	5,848	6,238	6,246	6,350
	Zirconium (short tons)				
Australia	541,837	468,138	509,317	510,000	700,000
Republic of South Africa	88,000	110,000	140,000	140,000	140,000
U.S.S.R.	80,000	80,000	90,000	90,000	90,000
All other	39,421	41,939	42,314	44,020	44,000
Total	749,258	700,077	781,631	784,020	974,000

SUMMARIES OF TRADE AND TARIFF INFORMATION

USITC PUBLICATION 841

COMPLETE LIST OF SUMMARIES PUBLISHED TO DATE IN SCHEDULE 6

Control No.	Publication date	Title
6-4-1	Mar. 1981	Construction, Mining, and Material-Handling Machinery (Supplement--December 1984)
6-5-2	Apr. 1981	Ignition Equipment and Lighting Equipment for Motor Vehicles; Batteries (Supplement--June 1983)
6-5-3	May 1981	Electrical Capacitors and Resistors (Supplement--July 1983)
6-4-4	May 1981	Metalworking Machine Tools (Supplement--Dec. 1984)
6-4-5	June 1981	Typewriters Not Incorporating a Calculating Mechanism (Supplement--July 1983) (Second Supplement--December 1985)
6-6-6	June 1981	Motorcycles (Supplement--October 1984)
6-4-7	July 1981	Printing and Typesetting Machinery and Printing Plates (Supplement--October 1984)
6-6-8	July 1981	Rail Locomotives and Rolling Stock (Supplement--August 1983)
6-5-9	July 1981	Television Cameras (Supplement--June 1983) (Second Supplement--December 1985)
6-4-10	July 1981	Ball and Roller Bearings and Parts (Supplement--September 1983)
6-5-11	July 1981	Electrical Equipment for Making, Breaking, Protecting, or Connecting Circuits (Supplement--August 1983)
6-5-12	Aug. 1981	Radio Apparatus (Supplement--September 1983) (Second Supplement--December 1985)
6-4-13	Sept. 1981	Computers, Calculators, and Data Processing Machines (Supplement--August 1983)
6-4-14	Sept. 1981	Sewing Machines (Supplement--August 1984)
6-1-15	Feb. 1982	Ores and Concentrates and Other Metalbearing Materials
6-5-16	Feb. 1982	Electronic Tubes and Parts (Supplement--October 1983)
6-5-17	Mar. 1982	Portable Electric Lamps and Electric Lamp Bulbs (Supplement--October 1983)
6-2-18	Apr. 1982	Aluminum

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SUMMARIES OF TRADE AND TARIFF INFORMATION

USITC PUBLICATION 841

COMPLETE LIST OF SUMMARIES PUBLISHED TO DATE IN SCHEDULE 6--Continued

Control No.	Publication date	Title
6-2-19	Apr. 1982	Lead and Zinc (Supplement--October 1985)
6-4-20	May 1982	Foundry Machinery and Metal Rolling Mills (Supplement--September 1984)
6-4,5-21	July 1982	Certain Consumer and Industrial Electrical Products (Supplement--July 1984)
6-5-22	July 1982	Semiconductors (Supplement--August 1984)
6-5-23	July 1982	Microphones, Loudspeakers, and Electric Sound and Visual Signaling Apparatus (Supplement-November 1984)
6-6-24	Aug. 1982	Pleasure Boats (Supplement--Dec. 1984)
6-6-25	Aug. 1982	Floating Structures
6-6-26	Aug. 1982	Certain Motor-Vehicle Parts
6-4-27	Aug. 1982	Pulp and Paper Machinery and Bookbinding Machinery (Supplement--Oct. 1984)
6-5-28	Sept. 1982	Telephone and Telegraph Apparatus, Radio Navigational Aid, Radar, and Radio Remote Control Apparatus
6-3-29	Sept. 1982	Fasteners and Hardware (Supplement--Oct. 1984)
6-4,5-30	Sept. 1982	Certain Electrical Household and Commercial Appliances and Parts
6-2-31	Oct. 1982	Precious Metals (Supplement--July 1985)
6-5-32	Nov. 1982	Electric Power Machinery and Equipment (Supplement--June 1984)
6-5-33	Dec. 1982	Television Apparatus, Except Cameras (Supplement--September 1984)
6-3-34	Jan. 1983	Handtools, Cutlery, and Related Products (Supplement--Oct. 1985)
6-2-35	Jan. 1983	Copper (Supplement--Nov. 1985)
6-4-36	Feb. 1983	Scales and Weighing Machinery
6-4-37	Mar. 1983	Office Copiers and Miscellaneous Office Machines
6-3-38	May 1983	Certain Metal Products
6-4-39	May 1983	Internal Combustion Engines and Parts
6-4,5-40	June 1983	Industrial Food- , Beverage- , and Tobacco-Processing and Related Machinery and Parts
6-6-41	June 1983	Forklift Trucks and Similar Industrial Vehicles and Parts Thereof

COMPLETE LIST OF SUMMARIES PUBLISHED TO DATE IN SCHEDULE 6--Continued

Control No.	Publication date	Title
6-4-42	July 1983	Wrapping, Packaging, and Can-Sealing Machinery
6-2-43	Aug. 1983	Certain Base Metals
6-4-44	Sept. 1983	Textile Machinery and Parts
6-2-45	Oct. 1983	Ferroalloys
6-6-46	Nov. 1983	Aircraft and Spacecraft and Parts
6-4-47	Dec. 1983	Boilers, Turbines, Related Machinery, and Parts
6-4-48	Feb. 1984	Centrifuges and Filtering and Purifying Equipment
6-6-49	June 1984	Automobiles, Trucks, Buses, and Bodies and Chassis of the Foregoing Motor Vehicles
6-4-50	June 1984	Machines Used for Molding and Forming Rubber or Plastics
6-4-51	June 1984	Certain Mechanical Power Transmission Equipment
6-4-52	Aug. 1984	Agricultural and Horticultural Machinery, Lawnmowers, and Tractors
6-4-53	Sept. 1984	Miscellaneous Parts of Machines, N.S.P.F.
6-4-54	Sept. 1984	Industrial Heat Treatment Equipment
6-4-55	Oct. 1984	Pumps for Liquids and Parts
6-4-56	Oct. 1984	Taps, Cocks, Valves, and Similar Devices and Parts
6-6-57	Oct. 1984	Miscellaneous Vehicles and Transportation Related Equipment
6-4-58	Nov. 1984	Fans, Blowers, Compressors, Air Pumps and Vacuum Pumps, Air-Conditioning and Refrigeration Machines
6-4-59	Nov. 1984	Hand-Directed or -Controlled Power Tools
6-4-60	Nov. 1984	Miscellaneous Machines and Equipment
6-4-61	Nov. 1984	Miscellaneous Non-Metalworking and Non-Metal Processing Machines
6-2-62	Jan. 1985	Iron and Steel